



GOPHER PEAVEY 1989



PHOTO BY DAVID MECH

"It started as a low cry, somewhere beyond the ridge behind us. Instinctively, we froze. Then the sound began to grow, like a noon whistle in some farm town. Soon it was joined by others, until it became a wild, wailing chorus. Wolves.

For 30 seconds, their cries filled the morning air. I tried to imagine how many were in the pack and what had prompted them to sing at this moment. No sooner had I begun to reason, it seemed, than they stopped.

No longer was the morning the same. It had been beautiful. It had been spellbinding. Now it was beyond that.

—Sam Cook

GOPHER PEAVEY

1989

TIM KNOPP



Dr. Alan Ek

Professor Tim Knopp collapsed and died during one of his favorite pursuits, running, on the afternoon of March 23, 1989 in St. Paul. Dr. Knopp was a member of the faculty of the Department of Forest Resources. Dr. Knopp was well known in the University and in the region for his teaching, student advising and service to outdoor recreation and environmental interests. Dr. Knopp was born on August 23, 1935 on a farm near Winona, Minnesota. He attended the University of Minnesota and obtained a bachelor's degree in forestry in 1957. Subsequently he attended the University of Arizona and earned a master's degree in wildlife management in 1959. He obtained a Ph.D. degree in forestry from the University of Minnesota with an emphasis on forest recreation in 1970. His work experience included employment in California,



Arizona and New Mexico. He was employed as a game management biologist for the state of Montana from 1962 to 1965 and he became an instructor in the College of Forestry at the University of Minnesota in 1968. He rose to the rank of professor in 1987.

Dr. Knopp was active in the conduct of the Recreation Resources Management Curriculum and the Resources and Community Development program and, in recent years, directed both of these programs. He taught courses on outdoor recreation design, planning and management, outdoor recreation behavior and policy and he directed numerous seminar courses on these topics. He was a very dedicated advisor to the students in these programs and he was active for many years in University committees concerned with student affairs and social concerns. He was the author of numerous popular and technical articles on

recreation, notably works dealing with trail planning, wilderness use, user behavior and recreation resources management and policy. Dr. Knopp was an avid outdoor recreationist participating in running, bicycling, cross country skiing, hiking and canoeing. He was active in the Nature Conservancy, and a director of both the Voyageurs National Park Association and the North Country Trail Association and an advisor to numerous other groups. He was a frequent consultant to outside groups on trail and recreation area planning. Students will miss his many extra efforts on their behalf and the faculty will miss a very helpful and concerned colleague.

Dr. Knopp is survived by his wife Kajsia, son Erik and his sister Judy Romine.



TIM KNOPP

Erik Petersen



TIM KNOPP: GOPHER PEAVEY EDITOR — 1957

Dr. Tim Knopp was there for the students. He seemed to thrive on helping — whether it was academics or extra-curricular activities. Tim accompanied the RRM Club on various outings, and these are my most vivid memories of him. One such outing was a three-day trip to Voyageurs National Park. Tim, of course, had twice as much energy as most of the students and he shared his insight of the park along with some good stories and great humor. On other occasions, he opened his home to us or took students to meet a resource professional.

Tim motivated. He generated ideas for activities for the RRM Club, and for individual students as well. That students needed to get involved in activities, politics,



and their communities was Tim's obvious philosophy indicated by his "active" involvement at the University—anything to prevent general acceptance or lethargy regarding the status-quo. By setting an example, Tim taught people that they could make a difference in things.

Tim advocated democracy and public participation in resource allocation decisions, and this was a common thread through several of his classes. He seemed to favor a diversity of recreation opportunities, in order that the "wants" of the majority would not exclude those of the minority, to achieve an "equitable" balance of experiences in the end.

Dr. Tim Knopp will be missed by us all. His contributions to many students lives will hopefully ensure a continuance of his work and ideas.



PHOTO BY TIM KNOPP



VILIS KURMIS



Christian Siems

Vilis Kurmis will retire from the College of Natural Resources after the 1989 Itasca session.

If the measure of a teacher is his ability to open students' eyes and minds, then Vilis Kurmis is among the very best teachers I have had.

Like most forestry students, I had spent a great deal of time in the woods before I went to Itasca. Yet to me a maple was a maple, a pine was a pine, and the little herbaceous stuff that grew on the ground was just...well, just sort of there. After only a few days of following Vilis through Itasca's varied forest types, I learned to read the forest like a book. I learned how the maples grow in the pines' shadows, and that the kind of 'herbaceous stuff' that grows on the forest floor is intricately dependent upon the types of trees that grow above. I could speculate on what a particular stand might have looked like 100 years ago, and what it might look like 100 years from now. I don't remember the precise moment that I began to see the forest differently, but in his kind manner Vilis gave me the key to the forest's diary, and the knowledge to interpret its ancient pages.

Vilis's path to the University of Minnesota might seem unlikely, but anyone who has ever struggled to keep up with him as he strode through the woods knows that Minnesota's forests are exactly where he belongs. He was born in Latvia in 1922, and his career in forestry began at Baltic University in the Federal Republic of Germany. His home and his country were lost during World War II. He and his wife, Irma, settled here in Minnesota, and Vilis received both his M. S. and Ph. D. from the University of Minnesota. His teaching and research duties have varied, from studying forest ecosystems throughout Minnesota and forest regeneration in northern Minnesota, to teaching Forest Ecology on the

St. Paul Campus. But it is the Itasca session that Vilis says he'll miss most, and it is Itasca that his students remember him by. He says he'll miss the close interaction with the students at Itasca, and their eagerness to understand forest structure and succession.

I think that I perhaps now know what makes Vilis such a wonderful teacher. He finds great joy in unlocking the forest's secrets, but I think he finds even more satisfaction in sharing his knowledge with others. You always got the feeling from Vilis that he was just as interested in seeing the forest through your eyes as he was in making you see it through his. The eagerness of his students is, I think, an offshoot of his own natural enthusiasm and curiosity. In his forest classroom, curiosity builds on curiosity, until a class full of cool, unimpressed juniors is 'oooh-ing' and 'aahing' its way through the woods as if seeing them for the very first time. Each discovery by a student, each new theory, is greeted by Vilis not with reasons why it's probably wrong, but with new explanations that could possibly make it right. And kindly, gently, one more student's eyes are opened to the wonders of the forest's structure in time and space.

Vilis Kurmis is not one to talk about himself too much. He requested only that this piece focus on Itasca.

But I already knew that I was going to write of Itasca from the moment I eagerly volunteered to write this piece. That is because, and in this I think I share the sentiments of anyone who has ever studied under Vilis, I have never looked at the forest the same since my time with him in the woods of Itasca.

Most of all I wanted to write this piece because I feel that I am very lucky. I am lucky to have had the chance to study a very special place, Itasca's forests, with a very special man, Vilis Kurmis.



PHOTO BY MARGE NICOLE

DON TENNEY

In October, 1988, Don Tenney and his brother Rob died when their fishing boat crashed into the rocks off Port Alexander, Alaska. A friend, Mike Glaab, died in the wreck as well.

Don graduated from the then-College of Forestry in 1985. After growing up in Plymouth and graduating from Wayzata High School, he and Rob moved to Port Alexander to go into commercial fishing. Don worked hard, became a good fisherman, and earned enough money to pay for his education. He learned to love the life of a fisherman, and upon graduation moved back to Alaska and bought a fishing boat. Because of electronic problems on the boat, the crew never saw the rock that caused the wreck.

The brothers died pursuing the life of freedom so many of us in Natural Resources seek. A memorial scholarship has been established in Don's name.

Don and Rob Tenney are survived by their brother, Bruce, their parents, Dr. John F. and Bernice Tenney, their sister and brother-in-law Barbara and Marcos Pinto, and aunts and uncles in International Falls.

CONTENTS

In Memoriam: Tim Knopp	
<i>Dr. Alan Ek</i>	2
<i>Erik Petersen</i>	4
Dedication: Vilis Kurmis	
<i>Christian Siems</i>	6
In Memoriam: Don Tenney	8
Dean's Report	
<i>Richard A. Skok</i>	10
Department Reports	
<i>Forest Resources, Alan Ek</i>	12
<i>Forest Products, James Bowyer</i>	15
<i>Fisheries & Wildlife, Ira R. Adelman</i>	17
Faculty	
<i>Forest Resources</i>	20
<i>Cloquet Forestry Center Staff</i>	29
<i>Forest Products</i>	31
<i>Fisheries & Wildlife</i>	36
Staff	40
Graduating Seniors	45
Graduate Students	52
Itasca Field Session	
<i>Ed Musielewicz</i>	54
Itasca Session in Retrospect	
<i>Janet Larson</i>	55
Cloquet Session	
<i>Khiam Lin</i>	57
<i>Mark Lohmeier</i>	57
<i>David Larson</i>	58
Summer Jobs	
<i>On Patrol in the Black Hills by Sue McDonald</i>	60
<i>My Hot Summer Dressed in Nomex by Marcy Warner</i>	61
<i>Working in a Goldmine by Jeff Cordes</i>	63
<i>Singing and Unexpected High "C" by Jeff Cordes</i>	65
Recreation Resources Management Club	
<i>Dean Skalbeck</i>	67
Paper Industry Management Association	68
Forest Products Reseach Society	69
TAPPI	70
Forestry Club	
<i>Elizabeth Krueger</i>	71
Student Chapter of the Wildlife Society	
<i>Perry Ward</i>	73
SAF Convention	
<i>John Elholm</i>	75
Wildlife Spring Field Trip	
<i>Perry Ward</i>	60
Forestry Products Spring Field Trip	
<i>Chad Collmann and Jeff Brinkhaus</i>	76
Southern Forestry Tour by Elizabeth Krueger	76
Conclave 1988 by Dave Haugen	77
Christmas Tree Cut by Cindy Pierson	78
Christmas Tree Lot by Dave Haugen	78
The Raptor Center	79
Scholarships	80
Changing Times: The Lady of the Woods Now Wears Popcorn Perfume	
<i>Christian Siems</i>	81

RICHARD A. SKOK

DEAN, COLLEGE OF NATURAL RESOURCES

Much has happened at and to the University since I last made a college report to you. The turmoil and controversy surrounding the administration and financial management of the University over the past year have brought about many changes in the upper level leadership reaching all the way to the Board of Regents. Nils Hasselmo returned to the University of Minnesota from the University of Arizona as president effective in early January 1989. He has been well received both within and outside the University. He brings the integrity and respect that will be needed as the University attempts to regain the confidence of the people who support and believe in the importance of this institution to Minnesota. He seems to have the ability to communicate on complex issues in an understandable way with those less acquainted with the diversity of the University.

Some of our alumni have raised questions about the University and have been reluctant to continue support of our programs. Many others, however, have rallied to be supportive once they have been reassured that steps were being taken to correct problems, that some issues were inaccurately reported, and that much good was still happening at this distinguished institution. We and you have been reminded in a most forceful way that the University of Minnesota continues to represent the most important asset that the people of this state have.

Even though there has been a great deal of unfavorable press about University problems, the programs of the University continue to function. Faculty did research,

teaching and outreach despite the distractions of the past year. Students attended class, studied and, indeed, graduated and took new jobs in the fields related to their studies. I take pride in the manner in which our faculty, staff and students in the College of Natural Resources conducted themselves during this difficult period. Obviously most of what was happening related to things over which we had little or no direct control.

Some college highlights of the past year included the following:

- The college was officially renamed the College of Natural Resources by action of the Board of Regents in August 1988.
- In late March of 1988 we occupied the new Natural Resources Administration Building (NRAB) and the research laboratories added on to the east side of Green Hall.
- The Forest Resources faculty, staff and students moved temporarily to the old Health Services Building on campus, just west of Green Hall and south of the gym.



This move occurred in late August and remodeling in Green Hall began in late December. We expect Green Hall remodeling to be completed by March 1990.

- The mural in Green Hall will be saved and restored as part of the remodeling effort. The outpouring of alumni and artist interest was most helpful in getting a reversal of the earlier decision by architects on this issue.
- A 'natural resources and environmental studies' curriculum is under development jointly with the College of Agriculture. This is intended as a supplement to our current core program offerings in the college and seeks to attract students to our offerings who are not presently interested. The offering would be rigorous and serve a presently unmet need in the state.
- The Governor's Blue Ribbon Commission on Forestry and Forest Products has recommended and Governor Perpich supported a strengthened Paper Science and Engineering program in the college as well as an expanded tree improvement program through the Agricultural Experiment Station. The 1989 legislative session will address these items in the Governor's budget.
- The U. S. Fish and Wildlife Cooperative Unit has been established in the Department of Fisheries and Wildlife. Dr. Mary Henry has been appointed as unit leader and has been with the department since early fall 1988. Two more scientists will be arriving shortly.
- In addition, we had a site visit by a team from the U. S. Park Service in February looking at establishing a Cooperative Park Service Unit in the Department of Forest Resources. This would be a one or two person unit focusing on social science research and graduate education relating to needs in national parks. This unit

would be sponsored jointly by the Midwest and Rocky Mountain Regions of the National Park Service.

Many of the specific program and people developments will be covered in the departmental reports. I would like to finish my report with a review of the enrollment picture. This fall quarter we had an undergraduate enrollment of 289 students, up slightly from a year earlier. We also had 112 graduate students enrolled in our graduate programs. Enrollment is more evenly divided across the college at the undergraduate level than in the past. Presently by department we have the following:

Fisheries and Wildlife	90
Forest Products	70
Forest Resources	120
Adult specials	9

Employment opportunities for graduates have strengthened based on reports I receive from those working directly on these matters with students and graduates. John Bell and his staff in the college's Office for Student Affairs also report that the name for the college brings more inquiries from prospective students than did the previous name. Undoubtedly this indicates that the breadth of our programming was not being reflected under our previous title. John's office has also been working more closely with advisers in the College of Liberal Arts to identify students who have interests in our programs. This working relationship reflected an unusually high new enrollment in the college for winter quarter when we moved against the usual trend and maintained our fall enrollment level. A substantial drop is usual in programs such as ours as we move from fall to winter term.

This has been a difficult year for those of us who have devoted much of their professional life to the University of Minnesota. It has been a difficult year for the many of

you who are alumni and friends of this great institution and believe so strongly in what it has stood for and has contributed over the years. While we are not out of the "woods" yet (and what good forester really

wants to be), I believe the institutional leadership has regained its true bearings and has set out on a path that will make you again proud of the University of Minnesota.

1988 IN REVIEW

ALAN EK

PROFESSOR AND DEPARTMENT HEAD,
FOREST RESOURCES

This year has been a period of expanding effort and commitment by faculty. New courses have been initiated, significant state-wide conferences have been developed and we have survived a moving adventure. The stories below are a few of the highlights.

The second phase of the Green Hall remodeling and addition project is proceeding well. We expect that to be completed and to return to Green Hall late in 1989. That move should go smoothly because we have gained much experience

by our recent move to temporary quarters in the Health Services Building on the St. Paul Campus. The moving occupied much of August in 1988. It was a stressful period, but everyone handled it very well. Since it will be a while before we return to Green Hall, please come and see us at the Health Services Building.

The partial completion of the Green Hall project, specifically the addition of laboratories to the building, has paved the way for substantial new research in the areas of forestry physiology, forest genetics and water quality. Those new labs are rather hard to get to now because of the remodeling going on in Green Hall this year, but there is much activity there. Recent research reports suggest Carl Mohn and Glenn Furrer and their associates are making significant progress in research on tissue culture and biotechnology applications to forestry. Notable among these efforts are those to improve the aspen resource.

Two major conferences were conducted in Minnesota this year. The first was 'Minnesota's timber supply: Perspectives and analysis' held at Grand Rapids. Howard Hoganson and I shared some of the planning for that. The second major conference, held in Duluth, dealt with 'Forest management for nontimber values'. These conferences have highlighted the importance of forest resources in Minnesota and the diversity of interests and perspectives for those involved in using and managing them.



For new initiatives, we are taking Commitment to Focus planning seriously. We have expanded the visibility and enrollment in some of our courses. Examples include the course on the role of natural resources in developing countries taught by Hans Gregersen and Dietmar Rose, a colloquium on watershed management led by Ken Brooks, and expanded enrollment in the geographic information systems course taught by Sean Ahearn. Ed Sucoff has also helped the Department of Fisheries and Wildlife in adding and refining coursework at Itasca to help fisheries and wildlife students attending the session there.

Lloyd Queen is our newest faculty member. Lloyd came from the University of Nebraska and joined us as a research associate in the Remote Sensing lab. His special areas of interest are geographic information systems and remote sensing use in land use planning. He will work with faculty and graduate students on research involving quantitative approaches to natural resource inventory and management utilizing remote sensing and geographic information systems. Lloyd holds Ph.D. and master's degrees in geography from the University of Nebraska. He had served as staff researcher at the Center for Advanced Land Management Information Technologies, University of Nebraska.

The Minnesota Tree Improvement Cooperative led by Bob Stine and Carl Mohn and the Vegetation Management Cooperative led by Marna Butler-Fasteland and Ed Sucoff continue to make important contacts and significant contributions to forestry practice in the state. The cooperatives are especially helpful as communication linkages between research and practice. A new effort, the Great Lakes Forest Growth and Yield Cooperative, has been formed to cover the entire region and David Walters, a new research specialist, is assisting with

the development of that across the region. We think this new cooperative will have a significant impact on the availability and utility of means to predict forest growth and yield for a variety of purposes. Dave Walters has a master's degree in forest biometrics from Virginia Polytechnic Institute and State University and a bachelors degree in forest management from Oregon State University. Before his appointment here Dave served as forest statistician with Boise Cascade Corporation in Idaho.

Terese Walsh has also joined us as a research specialist in the biometrics area. Terese holds a master's degree in forest biometrics from Virginia Polytechnic Institute and State University and a bachelor's degree in forest management from Iowa State University. Before coming to Minnesota she has served as a consulting statistician in Boise, Idaho, and as a statistical consultant at Clemson University.

Michael Stine joined us as a post-doctoral research associate working with Glenn Furrner in the forest genetics and molecular biology area. Rob Doudrick is also serving as a post-doctoral research associate to continue departmental research on mycorrhizae identification and soil-site relationships for various tree species. Bob Hanson, extension fellow, left for a position as forestry specialist with the Pennsylvania State University Cooperative Extension Service. Emily Chesick, tissue culture specialist, left recently for a research position with Westvaco Corporation in Summerville, South Carolina.

Marcia Ritterling joined the department as secretary in August. She previously served as secretary in Professional Development for Continuing Education and Extension. Andrea Wieland has joined the Remote Sensing lab as secretary replacing Betty Schiefelbein. She previously served as word processing specialist in the Depart-

ment of Horticultural Science and Landscape Architecture.

A search has also been initiated to fill the F. B. Hubachek, Sr. Chair in Forestry. The chair was established through gifts by the late F. B. Hubachek, Sr. and his family plus support from the permanent University fund. We see this chair as having a major impact on our programs in forest ecology.

Dr. Pratap Chauhan, a visiting scientist from India, returned to India in January. He had been here for almost a year developing background in modeling as it relates to silviculture. Ji Hong Kim, from Korea, is also here as a visiting scientist. He is an associate professor in forest ecology and silviculture at the Kangweon National University. His visit is sponsored by the Korean Science and Engineering Foundation and he is working with Vilis Kurmis.

During the past year, faculty have been working on projects related to a PEW Charitable Trust Grant for a three year program of technical support to enhance the planning and implementation of forest-based projects and activities for sustainable development. Hans Gregersen and Allen Lundgren have been leading that effort. The PEW grant has led to the formation of an interdisciplinary program involving faculty from the College of Natural Resources and the University of Minnesota's departments of Anthropology, Ecology and Behavioral Biology and Rural Sociology together with colleagues at other institutions around the world. Hans Gregersen, together with Frank Miller, professor of Anthropology, also coordinated a conference on Culture, Environment, and Sustainable Development in June at the Earle Brown Center.

The Remote Sensing Lab has also received a \$496,093 three year grant from NASA to develop new forest inventory methodologies based on satellite imagery

and sophisticated sampling techniques. Marv Bauer, Sean Ahearn, Tom Burk and I are cooperators on that effort.

The Department has also been active in short courses this year. Notable among them is a recent short course on Remote Sensing and Geographic Information Systems which attracted a full house. Professor Emeritus Merle Meyer has also been actively involved with the Society of American Foresters Photogrammetry and Remote Sensing Group. Merle helped organize and coordinate a workshop on air photo interpretation at the SAF National Convention in Rochester, New York.

Janet Larson, UF senior, and Suzann Willhite, RRM senior, represented the College of Natural Resources at the Leadership for Tomorrow National Conference for College Women Student Leaders in Washington, D. C. in early June. Amanda Sjoquist, UF junior, also participated in the all-University Siggelkow Leadership Retreat at Camp St. Croix last spring. This retreat was held for students in leadership positions who want to develop such skills and interact with other student leaders.

Mel Baughman was promoted to associate professor with tenure. Mel is now in the process of developing a research program on taxation policy and incentives for non-industrial private forest landowners.

Dietmar Rose and Sean Ahearn have been awarded IBM microcomputer systems from the University's Woksape project based on their proposal for development of new windows applications on microcomputers.

Carl Vogt, instructor and extension specialist, received the 1988 Distinguished Service Award from the Minnesota Forestry Association in July. The award recognizes Carl's contributions in organizing the first Minnesota Forestry Fair and many other events.

Professor Al Alm participated in the

IUFRO northern forest silviculture and management symposium held at the Northeast Forestry University in Harbin, People's Republic of China.

Paul Ellefson stepped down after a very effective term as chair of the SAF Committee on Forest Policy. Research fellow Marina Butler-Fasteland was elected chair of the Minnesota Society of American Foresters for 1989. Research fellow Bob Stine stepped down after a very successful term in that position.

The Forestry Club hosted the 1988 Midwestern Forester's Conclave in October and drew about 150 students from midwestern universities to the event held at Welch Village near Red Wing. The Club also conducted a very successful slate of Foresters' Day activities. The Forestry and Recreation Resources Management Clubs also co-sponsored a weekend field trip to the Southeastern Minnesota Forest Resources Center in Lanesboro. That tour included the Dorer Memorial Hardwood forest, a fish hatchery and camping, canoeing and fishing. We owe Bill Ganzlin our thanks for leading such activities.

As you can see, much has happened during the past year. A real difficulty has been that faculty, staff, graduate students, and undergraduate students have been located in four different buildings (Green Hall, Natural Resources Administration Building, North Hall and Health Services). That does not seem to have dampened enthusiasm, but we are looking forward to being back together again by the time of this report next year.

JAMES BOWYER

PROFESSOR AND DEPARTMENT HEAD,
FOREST PRODUCTS

1988 in the Department of Forest Products was marked by a number of events, including more construction activity, the addition of new faculty and staff, growth in undergraduate student numbers, and further expansion of cold climate housing programs.

As in the year previous, the sounds of construction could be heard emanating from the area just to the south of Kaufert Laboratory as exterior work and sidewalks around the new Natural Resources Administration Building were completed. Toward year's end we had just begun to celebrate the dismantling of fences, barricades, and detours, when the process was begun all over again with the onset of Phase II remodeling of Green Hall. Though the work is badly needed and welcomed, we'll all be happy to see this project completed!



Despite all the widely publicized problems that the University has experienced in the past year, departmental programs have continued unabated over the same period. Progress was made on a number of fronts. In the undergraduate student category, a net growth of student numbers was experienced across the board, with the most notable growth occurring in the forest products marketing and paper science and engineering specializations; overall, the winter quarter ('89) enrollment was up 50% compared to a year earlier. The current group of students is a fairly serious bunch, and interest in professional clubs and activities is increasing. The paper science and engineering students, for example, initiated this year the nation's first ever student chapter of the Paper Industry Management Association (PIMA). In addition, the Forest Products Research Society (FPRS) student chapter was reinstituted after several years of inactivity, while student involvement in the Technical Association of the Pulp and Paper Industry (TAPPI) remained quite strong as in years past. Several recent developments point to the possibility of a major strengthening of our paper science and engineering effort through increased investment on the part of the State. Paper Science and Engineering Program Director, Bob Rouda, is doing an excellent job of tracking this through the legislative maze and will pass along news about this development as soon as something happens.

Much has happened with the Cold Climate Housing Information Center (CCHIC) since the last report. Most notably, we held our first ever cold climate housing summer session on the St. Paul Campus in August for instructors from the Minnesota Technical Institutes, added two new faculty/staff this past fall, and initiated a statewide series of fourteen builder-oriented seminars in February and March. In addi-

tion, the Minnesota Cold Climate Building Research Center, of which CCHIC is a part, was designated by the National Association of Homebuilders in July as one of thirteen designated regional research centers.

New to the Forest Products Department this year is Pat Huelman, who joined CCHIC in October as an Associate Professor and Extension Specialist. Pat comes to us from Iowa State University where he was Coordinator of the Iowa Quality Housing Program. He has a B. S. degree in Environmental Design and an M. S. degree in Architectural Studies, both from Iowa State, and his areas of specialization include residential design, energy conservation, and solar energy. Also joining us on a one-third time basis was Jeanne Brownback. Jeanne holds the title of Assistant to the Director, CCHIC. What this means is that she is involved in all kinds of programs, workshops, and projects as well as fundraising activities. When not working for the Department of Forest Products, Jeanne is Program Leader, Curriculum Specialist for the Rochester Technical Institute. She has a long history of experience in building science issues including a number of years as Director of the Energy Efficient Building Association. As a final note in the new faculty/staff column I should report that Tom Milton officially became part of the department last July 1 (1988). Though we have worked closely with Tom in his sawmill technology project over the years, his reporting responsibility was elsewhere. As part of this unit, Tom's sawmill assistance programs and editorship of the Forest Products Bulletin continue as previously and he also continues to maintain an office in Grand Rapids as well as in Kaufert Laboratory.

The department has been moderately successful in fundraising activities this past year, with significant contributions to scholarship funds and endowments and

major commitments from private donors to our forest products marketing program. Donations to our paper science and engineering scholarship program totalled \$28,500 this past year, while our forest products marketing scholarship endowments increased by about \$10,000; both of these developments are good news to students who seem to work more and more hours on the job each year in an attempt to meet tuition and living expenses. On the marketing program front, private donations now total more than \$266,000, counting anticipated matching funds, toward strengthening undergraduate, graduate and industry continuing education programs.

Speaking of industry-oriented programs, the number of industry-oriented short courses and workshops offered by the department increased in 1988-89 with the addition of several new courses. The menu included *Design of Wood Structures* — new course for practicing engineers (Franck), *Using Process Simulation in the Pulp and Paper Industry* — new (Rouda), and *Pulp and Paper for Forensic Scientists* — new (Gertje-Jansen, Erickson, and Ritter). In the category of continuing programs this year was the 39th Annual Lumbermen's Short Course (Hendricks), the Kiln Drying Short Course (Petersen and Erickson), Hardwood Lumber Grading Short Course (Hendricks), Sawfiling Short Course (Milton), Paper in Today's World — a course for elementary and secondary school teachers (Gertje-Jansen, Erickson, and Ritter), and the CCHIC builder seminars (Larson, Huelman, and Brownback) mentioned earlier. These things keep everyone around here scurrying, but do much to serve the needs of producers as well as consumers of wood products.

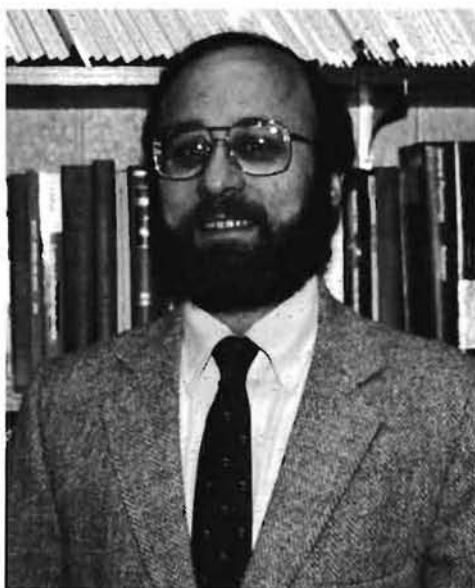
There is a great deal that has happened this past year that I'm not able to include

herein because of limitations on length. I'll simply summarize with the observation that we have twelve faculty and four advanced-degree professionals in the department now and that this is a dynamic group of folks. So if you want an up-to-date report on ALL of what is going on, you'll need to stop by to check it out for yourself! The welcome mat is always out, and we hope to see a number of you in the year ahead.

IRA R. ADELMAN

PROFESSOR AND DEPARTMENT HEAD,
FISHERIES AND WILDLIFE

In previous years I have been promising the arrival of the Minnesota Cooperative Fish and Wildlife Research Unit. Finally it is here! By the time you read this article it should be at two-thirds strength. The Unit is a formal arrangement between the University, the U.S. Fish and Wildlife Service, and the Minnesota Department of Natural Resources. Its



purpose is to foster applied research and to educate graduate students in natural resources management. The Fish and Wildlife Service pays the salaries of three scientists who become members of the department faculty, the department provides space and administrative support, and the Department of Natural Resources provides research funds.

The typical Unit consists of a unit leader and two assistant leaders. Mary Henry was selected as the first Unit leader. Since her arrival in September, she has been involved in the development of the Unit program and the selection of the assistant leaders. Mary had been the community ecology project leader at the National Fisheries Research Center in Ann Arbor prior to coming to Minnesota. In addition to her administrative responsibilities she will revive the department's dormant teaching and research program in aquatic toxicology. We anticipate that the assistant leader in wildlife will be here by late April 1989 and an assistant leader in fisheries by midsummer.

This really has been a year for expansion and new faces. Peter Sorensen joined the faculty in July 1988 coming from a postdoctoral position at the University of Alberta. Peter brings a new area of research to the department with his interest in the endocrinology and physiology of fish reproduction and reproductive behavior. Peter will likely involve the department in the new neuroscience program at the University because of his interest in the importance of olfactory perception in reproductive behavior. Ray Newman also joined the fisheries faculty last summer. Ray is a graduate of this department, served as a research associate in Forest Resources, and most recently was on the University of Connecticut faculty. Ray is teaching the fish management course. One of his research projects involves identifying the role of

chemicals that serve as defense mechanisms in aquatic plants. These chemical limit consumption of the plants by making them unpalatable to aquatic animals. David Landkamer also joined the faculty this year as an aquaculture extension specialist.

Dave is working with department faculty, the governor's advisory committee, and the general public to provide education for the development of fish culture in Minnesota. One additional secretary, Gerda Hagen, joined the department office staff of Norma Essex, Roz Zippa and Jo Schroeder to accommodate the additional personnel and the Co-op Unit.

A new initiative among a group of faculty seems timely in light of last summer's heat and drought. Yosef Cohen and other faculty are developing a long term research project to predict and plan for the effects of possible climatic changes. The foundation of the research will be the development of a computer model that differs from others available in that it will predict the interactions of plants and animals as a result of the climate change. Although Yossi will be doing most of the computer modeling, other faculty will be conducting experiments to provide data needed for the model.

Wildlife faculty member Dave Smith is fully recovered from serious injuries and back in Nepal conducting research on populations of native carnivores. It was not a carnivore but an Indian one-horned rhinoceros that attacked Dave while he was working on his project last May. Attacks by rhinos are becoming more common in that area as humans encroach on the rhino's territory. Dave has no idea of what provoked the attack since the rhino was first seen as it charged from the bush.

Jim Cooper's Canada Goose research has been gaining increasing attention in the mass media as problems caused by expanding populations of urban geese affect more com-

munities. Jim's research has identified successful procedures for limiting local population sizes, and more and more communities and groups are seeking his assistance in helping them to control their geese.

Research on reptiles has been added to our more commonly studied groups of fish, birds and mammals. Francie Cuthbert has undertaken a project on the distribution and ecology of Blanding's turtle sponsored by the Department of Natural Resources non-game fund. Ongoing projects include Peter Jordan's research on mortality in newborn white-tailed deer fawns, Gordy Gullion's work on forest management related to wildlife, and my own study on the role of thiamin in lake trout reproduction. Anne Kapuscinski continues her work with the multidisciplinary group at the University investigating gene transfer as a way to enhance the aquaculture potential of various fish species. Anne has become active in addressing environmental issues associated with the possible release of genetically engineered organisms. She has been appointed to the Minnesota Environmental Quality Board's Task Force on Genetic Engineering. Tom Waters has begun a phased retirement by going to a half-time appointment. Tom plans to use the extra time without the burden of department committees and other responsibilities to write and publish much of the stream ecology research he has conducted over the years. George Spangler was

honored by the Great Lakes Fishery Commission as the recipient of their Meritorious Service Award. George began a sabbatical in January 1989 during which he will be studying the conservation ethic in co-management of Indian and non-Indian fisheries.

The long promised Itasca session for fisheries and wildlife majors was finally instituted in September 1988. Twenty fisheries and wildlife students joined the forest resources students for over three weeks of intensive instruction in fisheries, wildlife and forest measurement techniques. All reports indicate that it was a very successful program. The spring field trip to observe and study wildlife practices in the western U. S. has grown in popularity as word-of-mouth information on the value of the trip spreads. This spring the trip was voluntary rather than mandatory for the first time, yet requests for permission to participate was at an all time high.

With all of our success in adding new personnel and programs this past year, we are bursting at the seams. Our highest priority goal right now is to acquire space to accommodate our program either through an addition to Hodson Hall or the acquisition of a new building. Hopefully I'll be able to report in a not too distant future issue of the Gopher Peavey our success in acquiring that new space.



SEAN C. AHEARN

Assistant Professor

Serves as assistant professor of remote sensing in the Department of Forest Resources. As such, he is responsible for conducting research and teaching undergraduate courses on remote sensing of natural resources.

His recent research involved the development of advanced techniques for digital image classification through the incorporation of artificial intelligence and expert systems technology.

Sean has worked in Indonesia on United States Agency for International Development (AID) — funded program for technology transfer of microcomputer-based remote sensing image processing systems. The work included hardware integration and software development in the U.S. and installation and training in Indonesia.



ALVIN ALM

Professor (Cloquet Forestry Center)

Teaches Silviculture and Senior Silviculture Seminar in St. Paul and Field Silviculture at the Cloquet Forestry Center. Advises a number of graduate students and conducts research in areas of regeneration and site preparation. Office is at Cloquet but often commutes to St. Paul.



GLENN FURNIER

Assistant Professor

Joined the faculty December, 1988. In this position, Fournier is responsible for conducting research and teaching graduate and undergraduate courses in forest biology.

Furnier holds a Ph.D. degree in forest science with minors in genetics and statistics from Oregon State University, a master's degree in plant pathology with a minor in plant breeding from the University of Minnesota, and a bachelor's degree in botany from the University of Michigan. His areas of expertise are in forest genetics and molecular biology. Prior to his appointment at the University of Minnesota, Furnier served as a research geneticist at the University of California, Riverside, where he examined DNA sequence polymorphisms in various grass and avocado species. He also served as a Natural Sciences and Engineering Research Council of Canada Postdoctoral Research Fellow at the University of Alberta, where he conducted research on genetic structure of pine and tamarack populations.

MARVIN BAUER

Remote Sensing Laboratory Director and Professor
Teaches Advanced Remote Sensing. Research interests include measurements and modeling of the spectral properties of vegetation, development of spectral inputs to growth and yield models, and applications of quantitative remote sensing methods to inventory and monitor crop and forest resources.



MELVIN BAUGHMAN

Assistant Professor

Teaches short courses and workshops and writes publications for private woodland owners on forest management and taxation, arranges continuing education courses for natural resource professionals. Conducts research on forest land appraisal and management of non-industrial private forest lands.



ROBERT BLANCHETTE

Professor

Currently teaches the Forest Pathology course in the Department of Plant Pathology. Active research projects include investigations of wood decomposition and industrial uses of fungi that selectively degrade lignin, biological control of soil-borne diseases in tree nurseries, screening trees for resistance to gall rust, and other studies involving forest and shade tree diseases.





CHARLES BLINN

Assistant Professor/Extension Specialist

Co-taught Forestry Applications of Microcomputers. Major areas of interest are in forest management and economics, timber harvesting, marketing, and quantitative natural resource management.



KENNETH N. BROOKS

Professor and Director of Forest Products and Forest Resources Graduate Studies

In addition to serving as Director of Graduate Studies in Forestry, teaching and research activities are continuing. During the past year, teaching responsibilities included Forest Hydrology, Forest Hydrology - Field Applications (Cloquet), Advanced Forest Hydrology, Range Management and a colloquium "Forestry for Sustainable Development" with Hans Gregersen and Al Lundgren. Research has focused on the hydrologic function of peatlands and further development of a hydrologic model of peatlands - upland watersheds in the northern Lake States. Research has continued on the role and importance of watershed management in sustainable resource development with an emphasis on developing countries. From June 2-18, he was a member of a four-person team of watershed scientists who visited field research sites in Sichuan and Guizhou Provinces, People's Republic of China. This was a cooperative effort with the U.S. Forest Service and the USDA Office of International Cooperation and Development. A textbook "Hydrology and the Management of Watershed", co-authored by Peter Ffolliott and John Thames of the University of Arizona and Hans Gregersen, will be published by Iowa State Press in early 1990.



THOMAS BURK

Associate Professor

Teaches Natural Resources Inventory, Forestry Applications of Microcomputers, and Forest Biometry. Research interests include development of forest growth and yield modeling methodologies, use of Bayesian concepts in sample survey design and analysis, microcomputer implementation of forest projection and planning systems, and statistical computation programming.

PAUL V. ELLEFSON

Professor of Forest Economics and Policy

Completed review of forest economics and policy research which is being published as *Forest Economics and Policy Research: Strategic Directions for the Future* (by Ellefson) (1989, Westview Press). Evaluation of state forest practice laws and statewide forest planning programs were completed in 1988 and have been reported in a number of publications. New research for 1989 and beyond includes evaluation of forestry information flows to state legislative systems and assessment of policy analyst activities in natural resource agencies.



DAVID FRENCH

Professor

Lectures on three subjects in forest pathology and is involved in the Urban Forestry course. Research involves vascular wilts (Oak Wilt and Dutch Elm Disease), aspen cankers, dwarf mistletoe of spruce and jack pine, chestnut blight and other tree diseases.



HANS GREGERSEN

Professor

Courses taught include Forest Economics and Planning, Natural Resources in Developing Countries, and Economic Analysis of Forestry Projects. Current research deals with forest and economic development of less developed countries, evaluation of forestry research and the process of technological innovation in forestry.





DAVID GRIGAL

Professor

Teaches Advanced Forest Soils and Silviculture: Soil-Site Relationships at Cloquet. Interested in forest vegetation — soil relationships, including nutrient cycling, especially nitrogen nutrition and cation depletion; productivity on peatlands; and relationships between soil map units and forest productivity. Past work has dealt with biomass estimation, effects of forest disturbance, and numerical classification of forest ecosystems.



HERBERT KULMAN

Professor

Teaches Forest Entomology, Current Topics in Forest Entomology and part of Wood Deterioration in Forest Products. Research includes ecological studies on forest insects, especially defoliators of spruce, fir, aspen and jack pine.



VILIS KURMIS

Professor

Teaches Forest Ecology and Forest Field Ecology at Itasca. Current research deals with composition, structure and succession of ash-elm forests, black ash regeneration after logging, and vegetation changes in upland forests of Itasca State Park. Vilis will be retiring from the College of Natural Resources at the end of the 1989 Itasca Session.

DAVID LIME

Research Associate

Joined the faculty in March 1987. Teaches the introductory Forest Recreation course and a newly offered course in Waterbased Recreation Resource Management. Is affiliated with the University's Tourism Center coordinated through the Minnesota Extension Service. Research interests focus on natural resource based tourism and recreation resource management with particular emphasis on water recreation and wilderness recreation use problems.



ALLEN L. LUNDGREN

Adjunct Professor and Research Associate

During 1988 I (along with Dr. Hans Gregersen) have been active in helping to manage the Forestry for Sustainable Development (FFSD) program of the Department of Forest Resources. This three-year program, funded by the Pew Charitable Trusts, is now well into its second year. It is developing training materials and management information and providing technical support for developing assistance organizations and national resource management agencies in the Third World, to enhance the sustainability of social forestry and watershed management projects. The program involves several faculty and graduate students from the Departments of Fisheries and Wildlife, Anthropology, Ecology and Behavioral Biology, and Rural Sociology. It also includes a number of collaborators from several other universities (Arizona, Yale, Oxford) and development agencies and non-governmental organizations. My activities this past year have included helping to: organize a conference/course at the University of Minnesota on environment, culture, and sustainable development; organize an international conference in England on the management of forestry research; teach a colloquium course on forestry for sustainable development; and organize a training course on the role of forestry in sustainable development of dryland regions for the Ministry of Agriculture in Jordan.



ROBERT MARTIN

Research Fellow

Joined the faculty of the University of Minnesota in the Remote Sensing Laboratory on February 16, 1988. His research interests lie in the integration of radar and optical measurements for the purpose of improving resource inventories and condition assessments of forests, grasslands and crops. Additionally, his interests include modeling the influence of canopy geometry on radar returns from vegetated surfaces. Related research interests include the development of ground truthing techniques necessary for the quantification of canopy morphology, vegetation moisture status and soil surface roughness.





CARL MOHN

Professor

Teaches Dendrology, Introductory Tree Physiology and Genetics, and Forest Genetics. Research includes forest tree improvement through selection and breeding; by hybridization in *Populus*.



JAMES PERRY

Associate Professor

Director of the Center for Natural Resource Policy Management and Director of Graduate Studies for Water Resources. Dr. Perry holds a Ph.D. in biology from Idaho State University, and has more than 20 years experience in water quality and environmental management. He has authored more than 65 technical and lay publications on water quality, aquatic biology, and environmental monitoring. He presents lectures at numerous locations around the world; he has collaborated with colleagues and presented lectures in many parts of the world, ranging from India and Thailand to Rwanda and Mexico.

Recent work in the Forest Water Quality Program has included experimental manipulation of whole ecosystems such as lakes (an ongoing 10-year acidification study), stream channels, temporary ponds, and coastal tide pools. Studies have included stresses such as acid, chlorine, ammonia, pesticides, and physical disturbance. Scientists in the program are involved in examining benthic invertebrates, algae, macrophytes, bacteria, and fungi. Many of the recent studies have involved decomposition and other measures of ecosystem integrity in order to address indirect effects of stresses. Both direct and indirect effects are also being addressed in a series of major studies of land use impacts on springs and streams in karst and sandstone watersheds in southeastern Minnesota.



LLOYD P. QUEEN

Research Fellow

Joined the faculty in September, 1988. He is responsible for working with faculty and graduate students involving quantitative approaches to natural resource inventory and management utilizing remote sensing and geographic information systems. His responsibilities include the design, development, and integration of digital image analysis and geographic information systems with emphasis on programming and data analysis. Recently took his Ph.D. in geography from the University of Nebraska. He holds a master's degree in geography from the University of Nebraska and a bachelor's degree in geography from Mankato State University, Minnesota. Served as staff researcher at the Center for Advanced Land Management and Information Technologies at the University of Nebraska prior to his appointment at the University of Minnesota. His areas of expertise are remote sensing, geographic information systems, automated cartography, and image processing and computer graphics.

DIETMAR ROSE

Professor

Teaches Forest Economics and Timber Management Planning, Quantitative Techniques in Forest Management, and Role of Renewable Natural Resources in Developing Countries. The latter course is taught by a team of faculty members and addresses emerging international developing issues. He is currently finalizing an integrated forest planning model with funding from the Legislative Commission on Minnesota Resources. He is also leading efforts for coordinating and networking forestry research on an international level. He is working with international organizations in the economic assessment of biodiversity.



SCOTTY SCHOLTEN

Professor

Teaches Important Forest Plants at Itasca, Farm and Small Woodland Forestry, and Conservation of Natural Resources Course. Research is on designing farmstead shelterbelts, dry-land field windbreaks under center-pivot irrigation systems, and living snowfences to more effectively perform their major functions of controlling snow drifting and soil erosion, as well as providing wildlife habitat. Artificial scale model shelterbelts, windbreaks, and living snowfences are used to study the effects of design on snow distribution patterns.



PHILIP SPLETT

Instructor

Career Opportunities coordinator and Instructor. Teaches Conservation of Natural Resources, Forest Resources Orientation, and Field Forest Measurements at Itasca. Provides information and assistance to students and alumni seeking employment. Currently chairs the College of Forestry Scholarship Committee.





EDWARD SUCOFF

Professor

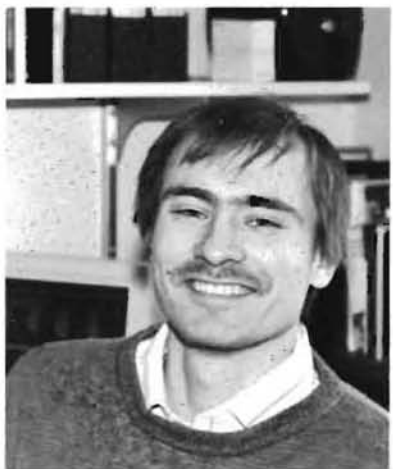
Teaches and learns from a great group of students in Tree Physiology and Genetics, Tree Physiology Lab, and Field Ecology at Itasca. Current research examines how acid rain affects trees and the physiology of water stress. Also involved in the Forest Vegetation Management Program.



CARL VOGT

Extension Forester/Instructor

Courses taught include Introduction to Forestry, Introduction to Minnesota's Natural Resources, Directed Study — S.E. Minnesota Hardwood Silviculture and Forestry for Teachers. Part-time Instructor and Extension Forester at the College of Forestry. General Chairman, 1988 — Minnesota Forestry Fair. Main areas of interest are Black Walnut management, maple syrup production, hardwood silviculture and Christmas trees. Manages woodlots and tree farms as a consulting forester and operates a nursery specializing in nut trees and hardwood seedlings. Very active in a number of forestry related organizations and professional societies.



DAVID WALTERS

Research Specialist

Joined the department in July, 1988, as a research specialist with the Forest Growth and Yield Cooperative. He holds a master's degree in forest biometrics from Virginia Polytechnic Institute and a bachelor's degree in forest management with a minor in statistics from Oregon State University. Prior to his appointment here, Dave had served as forest statistician with Boise Cascade Corporation in Boise, Idaho.

MARNA BUTLER-FASTELAND

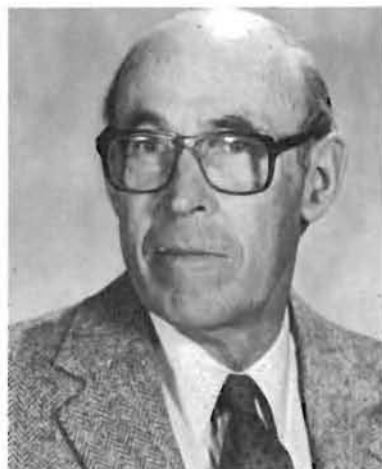
Research Fellow, Forest Vegetation Management Specialist
Directs the Forest Vegetation Management Cooperative at the Cloquet Forestry Center. She is responsible for conducting forest vegetation management research and transferring research results to forest managers.



GORDON GULLION

Professor

Activities have been mostly involved with ruffed grouse and their management. This has included experimental timber harvesting in various configurations to determine the best options from both a biological and economic standpoint. This forest manipulation has been mostly directed at aspen management. Involved in assessing the impact of hunting on a grouse population. Teaches the Forest Wildlife Techniques Course to foresters who attend the Cloquet session and participates in various workshops and training sessions in various parts of the country.

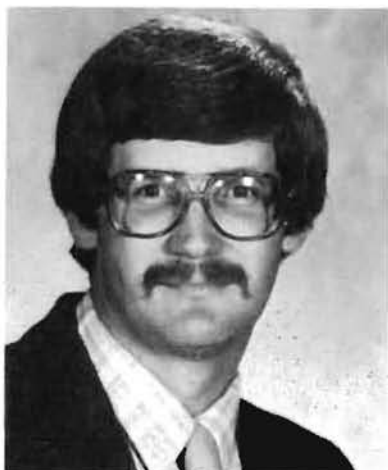


A. SCOTT REED

Assistant Professor

Extension Service programs and teaches FR 5248, Timber Harvesting and Engineering as part of the Cloquet session. Research activities include market system investigations of privately-owned timber, use of information in management decisions, and logging industry issues. Recent Extension programs include logging workshops, a short course on contracting forestry services, and the statewide North Star Exposition of Logging, sawmill and forest equipment.





RONALD SEVERS

Associate Scientist/Forest Manager

Current responsibilities include developing forest management programs for the Cloquet Forestry Center coordinating these programs with research activities at the Center.



ROBERT STINE

Research Fellow

Directs the activities of the Minnesota Tree Improvement Cooperative, working out of the Cloquet Forestry Center. Genetic improvement work is being carried out on red, jack, white, and Scorch pine and on black and white spruce.

ROBERT ERICKSON

Professor

Teaches Topics in Wood Moisture Relationships. Research focuses upon developing improved processes for the drying and overall production of lumber, the analysis of drying stresses and strains, moisture movement and its effects, and the analysis of perpendicular-to-grain creep in first-dried wood.



BRUNO M. FRANCK

Assistant Professor

Joined the faculty in September 1987. His responsibilities cover teaching and research in the area of structural design of wood structures. Teaches Mechanical Properties and Mechanics and Structural Design with Wood Products; will also teach Design of Wood Structures and Mechanics of Wood and Wood Composites. His research deals with the development of expert systems for the evaluation of structures and the application of artificial intelligence, qualitative physics and expert systems to the design of wood structures.

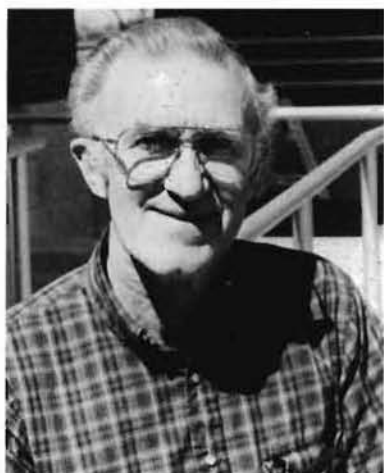


ROLAND GERTJEJANSEN

Professor

Teaches Pulp and Paper Technology, Wood-Base Panel Technology, Pulp and Paper Processes Laboratory and Advanced Topics in Panel Products Technology. Research is on utilizing Lake States hardwoods for structural panel products.





VERNON GUYER

Lecturer

After many years of R & D experience in the adhesives and paper industries, I am now teaching courses in Surface and Colloid Chemistry, Paper Physics and Coating Developments. My research interests include: the chemistry and utilization of starch, paper and board technology, and the fundamentals of permeability.

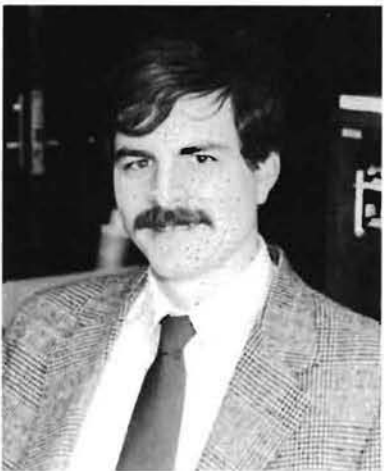


LEWIS HENDRICKS

Professor

Coordinator — Cold Climate Housing Information Center (CCHIC), established in 1987. CCHIC is a source of comprehensive information relative to the design and operation of energy-efficient homes. Its objective is to assist the homebuilding industry to improve dwelling efficiency with respect to economy, occupant health and safety, and extended dwelling life. The staff consists of faculty members from three University departments within three collegiate units: Forest Products (College of Natural Resources); Design, Housing and Apparel (College of Home Economics); and Agricultural Engineering (College of Agriculture). The units work together to examine issues and to contribute information pertinent to their own area of expertise.

Continues to conduct the annual two-week Lumbermen's Short Course and annual Hardwood Lumber Grading Short Course. Author of publications dealing with wood heating, preservation, ice dams, cold climate construction techniques and wood finishing topics. Consultant to wood industries and homeowners. Board member of Woodcraft Industries, St. Cloud, Minnesota, since 1971.



PATRICK HUELMAN

Extension Specialist

Former program leader in energy extension at Iowa State University, Ames. Joined the Cold Climate Housing Information Center in October as an extension specialist. Received a bachelor's degree in environmental design and a master's degree in architectural studies from Iowa State University. Since 1980 has held positions of specialist, program coordinator and program leader with Iowa State's Extension energy group. Initiated and coordinated the Iowa Quality Housing Project, providing builders, designers and suppliers with valuable design and construction information. Areas of specialization include residential design, construction methods and energy conservation.

ROBERT KROLL

Research Associate

Composite panel research; specifically work with anatomical structures — features of balsam poplar as they relate to problems in machinability.



TIMOTHY LARSON

Assistant Professor

Teaches Mechanical Properties, Wood-Fluid Relationships, Wood-Frame Building Systems and Materials, and Wood Drying and Preservation Processes. Thesis research examines the effect of pre-freezing on the perpendicular-to-grain creep of redwood during drying.



THOMAS MILTON

Associate Professor

Responsible for designing and implementing Extension programs and publications for Minnesota's sawmill industry and wood product manufacturers. Co-editor of the Minnesota Forest Products Marketing Bulletin.





HARLAN PETERSEN

Assistant Professor

Extension programs in forest products utilization and marketing with emphasis in the areas of wood drying and wood moisture relationships. Coordinator and student advisor in the undergraduate program in Forest Products Marketing. Teaching responsibilities included Wood Frame Building Systems and Materials, Forest Products Marketing, and the Annual Wood Industry Tours course. Advisor to the student chapter of the Forest Products Research Society and also resource person for the 4-H wood science/shop project.



DAVID RITTER

Scientist

Will finish Ph.D. from University of Idaho in Spring of this year. Research interests are in composite panel technology and utilization of eastern hardwoods in composites. Teaching responsibilities include partial responsibility for Wood as a Raw Material. Also teaches Wood Structure and Identification.



ROBERT ROUDA

Professor

Teaches Pulp and Paper Process Calculations (including the use of microcomputers for process modeling and simulation), Pulp and Paper Process Operations (applications of chemical engineering to industrial unit operations), and Paper Engineering Laboratory (including studies of industrial processes with the cooperation of local paper manufacturing companies). Interests lie in the development and application of modern computer process simulation technology to the improvement of pulp and paper process operations. This includes the development of computer simulation laboratories for graduate and undergraduate education seminars and workshops for industry, and associated computer programs for these purposes.

SIMO SARKANEN

Associate Professor

Course instructor for Wood Chemistry I, Wood Chemistry II, Adhesion and Adhesives, and Graduate Seminar. Research is on physiochemical properties of byproduct lignins and chemicals and engineering plastics from renewable resources.



ELMER SCHMIDT

Associate Professor

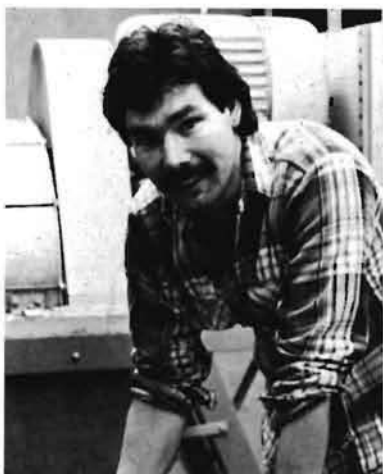
Teaches wood deterioration, Undergrad Seminar, Methods and Advances in Wood Protection and Mushroom ID and Ecology (Extension Course). Research is on control and application of fungi in forest products. Projects include: Fumigation of export oak, spore germination of wood decay fungi, preservative systems for wood composites, remedial treatment of decay, shiitake mushroom production on Minnesota hardwoods, biodegradation of kraft lignin components, and evaluation of new wood preservative systems, and biodeterioration in hardwood fuel chips.



PHILIP STEKLENSKI

Associate Scientist

Teaches Analysis of Production Systems. Major research interests are the technical and economic evaluation of new technologies in forest products.





YOSEF COHEN

Assistant Professor

Teaches Wildlife Ecology Management: Planning, Policy and Administration. Involved in ecosystem modeling and competition in aquatic ecosystems.



JAMES COOPER

Associate Professor

Teaches Wildlife Population Ecology and Management and Waterfowl Management. Research includes incubation behavior of North American waterfowl, ecology and management of Canada geese and trumpeter swans, and waterfowl ecology in an urban environment.



FRANCIE CUTHBERT

Associate Professor

Teaches Introduction to Fisheries and Wildlife Biology and Management. Research includes behavior, ecology and conservation of nongame birds.

MARY G. HENRY

Associate Professor

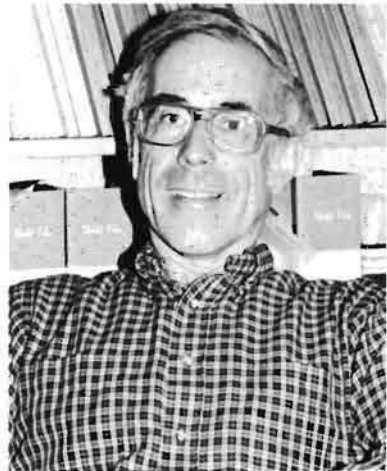
As a result of a Congressional appropriation, a Cooperative Unit was established in the Department of Fisheries and Wildlife in December 1987. The Unit is a formal arrangement between the University, U.S. Fish and Wildlife Service and Minnesota Department of Natural Resources. Its purpose is to foster applied research of interest regionally and nationally and to train graduate students in natural resource management. Mary Henry was selected as the leader of this Unit. Her research interests are in the areas of aquatic toxicology and fisheries biology. Mary and her two assistant leaders will each teach one graduate/upper division course each year while advising M.S. and Ph.D. students.



PETER A. JORDAN

Associate Professor

Is teaching the undergrad course in wildlife habitats and a grad course on ecology and management of large mammals. He was overseas last summer to continue studies of moose in Sweden and porcupines in Israel, along with participating in the International Game Biologists Congress held in Poland. At home, Jordan started a new ecological study of deer in the Metro area, and continued working on moose-silvicultural interactions on the Superior National Forest. He also spent several weeks at Isle Royale collecting data for his long-term moose-forest study.



ANNE KAPUSCINSKI

Assistant Professor

Courses taught include Aquaculture and Conservation. Biology: Genetic and Demographic Issues (alternating spring quarters). Research is on quantitative genetics of fish, genetic engineering of fish, and aquaculture of cold and cool water fish species. Extension specialist in aquaculture.





JAMES KITTS

Associate Professor

Each spring teaches Wildlife Management for Non-majors. Conducts workshops, seminars and field courses in Management of Woodlands for Wildlife. Organized and supervises the Minnesota Volunteer Woodland and Wildlife Advisor program. Instructs Master Gardeners, structural pest control operators, food processors and grain elevator operators in control of problem wildlife. Counsels urban and suburban landowners in methods of landscaping and management to attract desirable wildlife. Contributes to life skills of youth as a member of the National 4-H Shooting Sports Projects Committee and in Minnesota as an instructor and judge for 4-H projects in Minnesota 4-H Natural Science Program. Current research includes bird nesting activities in shelterbelts and educational evaluation of youth marksmanship programs.



DAVID LANDKAMER

Assistant Aquaculture Extension Specialist

Extension programs in aquaculture. Conducts conferences, workshops and seminars in aquaculture development. Counsels aquaculture clientele in technologies, regulations, and opportunities in aquaculture.



RAYMOND NEWMAN

Assistant Professor

Currently teaches Fisheries Management in Inland Waters and Assessment and Management of Vertebrate Populations and assists with Ethics and Values in Natural Resource Management. Current research focuses on stream ecology and stream fisheries with an emphasis on factors affecting trout production and trophic ecology, the effects of human disturbance on stream fish and invertebrates and the potential role of defensive chemicals in aquatic plant use by stream invertebrates.

DAVID SMITH

Associate Professor

Courses taught include Fisheries and Wildlife Orientation and Introduction to Fisheries and Wildlife Management. Research is on conservation of small wildlife populations.



PETER SORENSEN

Assistant Professor

Joined the department on July 1 as assistant professor of fisheries. Peter will be responsible for conducting research on fish reproductive behavior and physiology. He also will teach courses on comparative physiology and reproductive physiology. Peter presently is serving as a postdoctoral research fellow at the University of Alberta, where he is investigating endocrine control of pheromone detection, action, production, and release in teleost fish. He holds a Ph.D. degree in biological oceanography from the University of Rhode Island and a baccalaureate degree in biology from Bates College.



GEORGE SPANGLER

Professor

Teaches Ecology of Fish Populations and Fish and Wildlife Population Dynamics. Research includes fisheries management, fishery population analysis and modeling predator-prey interactions.



FACULTY – FISHERIES & WILDLIFE



THOMAS WATERS

Professor

Teaches Fishery Management in Inland Waters. Research includes stream ecology and secondary production. Director of Fisheries Graduate Studies.

COLLEGE OF NATURAL RESOURCES – STAFF



ANN MAYHEW

Assistant to the Dean



MARILYN WORKMAN

Administrator



KEN BROOKS
Director, Graduate Studies,
Forest Products and Forest Resources



NATURAL RESOURCES ADMIN.
(left to right) Terri Ray, Karen Dewanz, Karen
Kanda, Judy Rosaasen



FOREST RESOURCES STAFF: (left to right) Clara Schreiber, Janelle Schnadt, Kathy Middleton,
Marcia Ritterling, Andrea Wieland.

COLLEGE OF NATURAL RESOURCES – STAFF



MARY ANN HELLMAN
Senior Secretary, Minnesota Extension
Service, Forest Products



CINDY BUSCHENA
Junior Scientist, Forest Resources



FOREST PRODUCTS STAFF (left to right) Emily Sundeen, Barbara Walz, Lynda Ascher, Carol Laffoon, Lynda Tucker



FISHERIES AND WILDLIFE STAFF Back row: (left to right) Jay Maher, Mark Gross, Mike Voss, Catherine Potter. Front row: (left to right) Roslyn Zippa, Gerda Hagen, Jo Schroeder, Norma Essex



FISHERIES AND WILDLIFE
LIBRARIANS
Sue Stegmeir and Barbara Kautz



FORESTRY LIBRARIANS
Jean Albrecht (left) and Cheryl Owens

OFFICE FOR STUDENT AFFAIRS



JOHN BELL
Assistant Dean



PHILIP SPLETT
Career Opportunities Coordinator



BILL GANZLIN
Student Personnel Worker



SANDY GIBBS, Administrative Assistant



MARNI LUCUS
Administrative Assistant



RUBY ANDERSON-BARKER
Forest Resources



BILL BLYTHE
Fisheries and Wildlife



MARK BRAASCH
Recreational Resources Management



JEFF CORDES
Urban Forestry

GRADUATING SENIORS



STEVEN CORLEY
Forest Products



JOHN FERM
Urban Forestry



RODNEY FOUKS
Forest Resources



BRUCE FRESKE
Fisheries and Wildlife



JOHN ELHOLM
Recreational Resources Management



JOHN HERMAN
Forest Products



STEVEN JOHNSON
Forest Resources



ELIZABETH KRUEGER
Forest Resources

GRADUATING SENIORS



MARY LAZOR
Urban Forestry



KHAM LIN
Forest Resources



MARK LOHMEIER
Forest Resources



AL LUNDSTROM
Urban Forestry



SUSAN MCDONALD
Recreation Resources Management



BOB MILNE
Forest Resources



JAMES MOYNAGH
Fisheries & Wildlife



PAULA MEYERS
Forest Products

GRADUATING SENIORS



WILLIAM NELSON
Forest Resources



JAMES NOLTE
Fisheries and Wildlife



TIM O'HARA
Forest Resources



JOHN RICKERS
Fisheries and Wildlife



CHRISTIAN SIEMS
Urban Forestry
Spring 1989



STEVE TILLMANN
Recreation Resources Management
Spring 1989



MARCY WARNER
Recreation Resources Management
Spring 1989

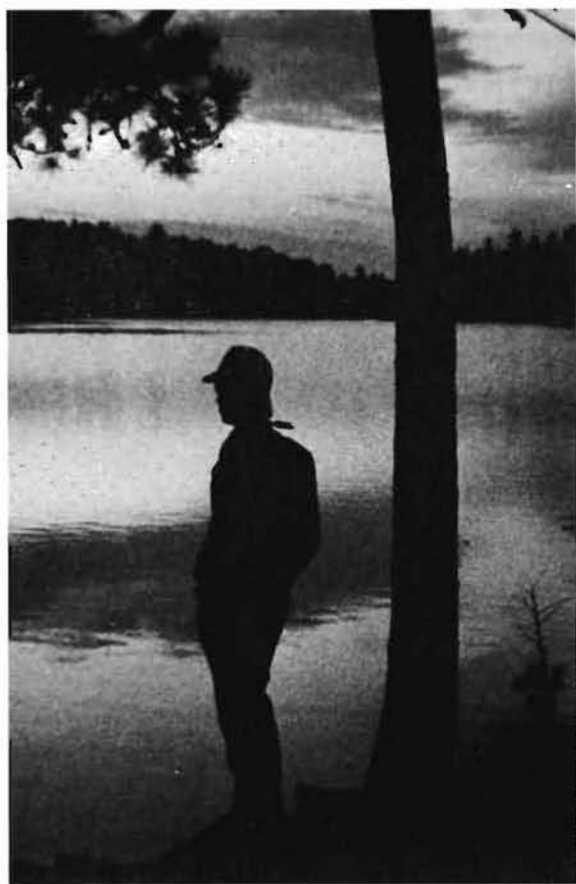


SUZANN WILLHITE
Recreation Resources Management
Spring 1989



COLLEGE OF NATURAL RESOURCES GRADUATE STUDENTS

(front row, left to right): Jeff Goetz, Pete Joria, Chris Holm, Joan Nichols, Ted Geier. (second row, left to right): Gregg Hove, Bill Olsen, Dawn Kreft, Carol Purchase, Bob Enis, Gary Fisher, Tim O'Hara. (third row, left to right): Doug McVey, Lisa Kobetsky, James Engstrom, Tom Kubisiah, Eleanor Gardner, Robert Quinn. (back row, left to right): Matt Pelkki, Sandy McCartney, Steven Lund, Brian Huberty.



"I think the loss of quiet in our lives is one of the great tragedies of civilization, and to have known even for a moment the silence of the wilderness is one of our most precious memories."

—Sigurd Olson
Songs of the North

ITASCA FIELD SESSION



Ed Musielewicz

After a long summer on the prairie at temperatures near the boiling point of mercury, I was looking forward to Itasca. I was ready for a change. My first impressions of the park were like those of many other people — Wow! I had forgotten how really beautiful it was. The grandness of the towering red and white pines was inspiring. Everywhere I looked reminded me of how much I really missed the woods. Little did I realize that Itasca would start looking less and less like a relaxing vacation hideaway and more and more like forestry boot camp.

After settling into a cabin, meeting my new roommates, and talking to a couple of friends on the crappie fishing outlook, I was ready to meet all the other new foresters. After the evening meal all the new recruits met to get to know one another and to meet

with our instructors. They told us what was expected of us over the next three and a half weeks (12 hours a day of work with no time off) and also split us up into two groups — alpha and bravo companies. I had been warned about the intensity of the session, but it was then that I realized Itasca was not going to be all play.

The first week was spent learning the characteristics and scientific names of the plants found in the Itasca ecosystem. I spent many hours with bravo company and our fearless leader, Scotty, trudging through swamps and over hills looking for elusive specimens of Minnesota's flora, such as joe-pye weed, coltsfoot and bearberry. During this time many of my evenings were filled up with making flash cards and memorizing Latin names like *Symphoricarpos alba* and *Rhus radicans*, in preparation for the next day's test. After the final on Labor

Day, everyone celebrated with a flash card burning ceremony which was culminated by an evening at the Northway saloon.

The rest of the session was spent in small groups working in ecology and measurements. Countless hours were put in measuring diameter, basal area, height and volume of tree stands. Time was also spent examining forest soils and plotting advanced reproduction of tree species and indicator plants. During this time I learned the joys of being strung out on caffeine and going to class on four hours' sleep, three cups of coffee and a bowl of Cap'n Crunch. Of course, after a report was done there was always time to do a little fishing or kick back with a few beers and bemoan the absence of the female species. Time passed quickly. Soon all the reports were done, all the finals taken and everyone relieved of duty.

Itasca was a lot of work, but, as I'm sure everyone else who was there will agree, it was also a great learning experience. No matter how intense the studying got, all one had to do to forget about school for a while was step outside the door and go for a short walk. There were also fish to be caught, canoe trips to be taken, beer to be drunk at the Northway and walks to be taken on the hiking trails. I'm sure most people will remember these things, as well as the friends they made, rather than the glut of work. I know it's not an experience I will soon forget.

ITASCA SESSION IN RETROSPECT

Janet Larson

It's been almost two years since I had the late summer Itasca field session experience — September of 1987. It's taken me nearly

that long to sum up my feelings about the academic hurdles overcome there. It was a bittersweet three and a half weeks that ended with most of us very tired (and some even sick). But it seems that the bitter wears off with time, and the sweet is what remains.

We learned a vast quantity of material there: some we mastered hard and fast, some we lost, and some we gained as a foundation for learning to come. Now when I walk through a forest, I see much more, ask more questions, and feel much more at home than ever before. I haven't taken a single hike or camping trip since Itasca during which I haven't examined or at least noticed the local flora. It's not surprising, then, that what remains with me most vividly are the plant walks with Scotty — Professor Scotty Scholten, that is.

A total of 140 plant species were as-



signed for us to learn in eight class days. Each 'botany' day, we were introduced to approximately 18 trees, shrubs, and/or herbs. Besides the obvious requirement of field recognition, our task was to commit to memory the family, genus, species and common name of the day's specimens in an eighteen to twenty-four hour period. This, of course, includes mastering the key features particular to each plant that makes identification unmistakable. An accomplishment of this magnitude, for the untrained plant observer, requires a memorization marathon. Besides dealing with the other rigors of the Itasca session, how does one begin to accomplish such a task?

In addition to having an unusual interest in plant i.d., two approaches worked well for me: association and repetition. Everyone is familiar with memorization by association, and our group came up with some memorable examples. Steve Tillmann's "my aunt and mum can dance" for *Mianthemum canadense* (false lily-of-the-valley) is one of my favorites. Barbara Burke's "it's vital to repair the roads after a frost" for *Vitis riparia* (frost grape) remained with me as well. It seemed as though everyone in camp came up with their own version of "I'm a lawn chair species in June" for *Amelanchier* spp. (juneberry). The more ridiculous the name, apparently, the more permanently the name will remain with you.

People associations work, too. Joe Pye and Sam Pubens are names that became semi-permanent nicknames for two particular characters in our class. I'm sure there are many more private names associated with individuals that most of us never heard about.

If I couldn't come up with an association, I tried repetition. I recall one agonizing late night that I plodded down to the cafeteria for a peanut butter sandwich chanting

rhythmically to myself "*Gaul-ther-i-a hispid-u-la-----Gaul-ther-i-a hispid-u-la---*" or some other odd Latin binomial. If the first two methods were unsuccessful, it came down to sheer memorization. How is that possible, I have to ask myself, with such overbearing names as *Apocynum androsaemifolium*?

After such vigorous memorization, where do those binomials go? I have to admit that some Latin names remained with me only long enough for the exam. Others mysteriously pop into my consciousness from some dusty corner of my brain when there is nary a plant in sight. Most names, I hope, will remain with me permanently.

Keeping up with Scotty in the woods was a challenge. I took two and a half steps for each of his single, Paul Bunyan-like strides. If you didn't keep up, the class would be far ahead, hovering over the next plant, before you finished scribbling one last key identifying feature into your notes. In the bog it got worse: in your hurry to catch up, a slight misstep usually meant water or mud in your boots.

Scotty didn't say too much on those walks, but what he did say you knew was important. The man retains such a plethora of plant information that you can be quite sure it didn't *all* come from textbooks. It is obvious to me that only a life of careful plant observation could explain his wealth of plant knowledge. I feel privileged to have had the opportunity to learn with such a professor.

So just what *was* so special about those plant walks? Maybe it was standing in the cool, quiet woods watching the first leaves of the season fall from the black ash. Perhaps it was the attempt to get one last look at the single, crumpled leaf on a solitary twig that was to serve as our only specimen of nannyberry. Or possibly it was being the last human to emerge from the

bog after having been stuck up to the kneecaps in mud, clutching a cold, aluminum clipboard.

Some of us never did catch up with Scotty in the end. I know that Joe Pye and Sam Pubens were left back in the woods. I'm sure that next year's class will find them.

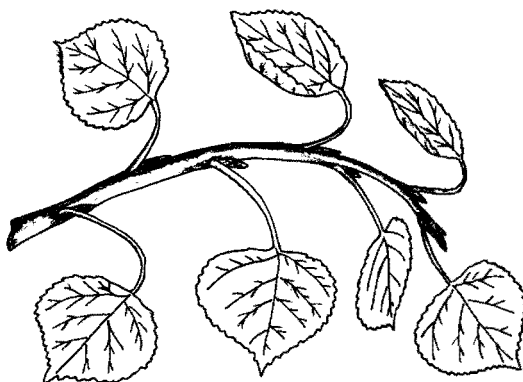
CLOQUET SESSION

Khiam Lin

I am grateful for being able to attend the Cloquet field session. It has left me with many experiences and fond memories. I feel I gained a lot in those nine weeks about practical forest management from professors who attempted to instruct their students in their own field of expertise. I've also come to realize that it is a completely different kind of setting to be lectured to in classrooms than to actually go out to the field and take part in what I called the "learn-to-apply" exercises. I think all of us there have to appreciate this type of field session even though some of the exercises seemed to us to be meaningless.

As an international student, being able to interact with American students was and still is a thriller to me. The Cloquet field session gave me an opportunity to make many new friends and work with my crew partners, with whom I went through many experiences; together we made a pretty good team. I also enjoyed playing hours of volleyball and ping-pong with my colleagues.

I don't know whether or not the session has made me one of the best forest managers, but I am pretty sure that it has turned me into a better forester.



Mark Lohmeier

When asked to write a comment or two for the Peavey about the Cloquet session, I began by digging out all my notes and handouts I received during the nine weeks I was there. The grocery bag full of quickly scribbled notes and well prepared handouts brought back memories of spending nearly seventeen hours a day collecting data, digesting the data I had collected or fabricating data I needed but didn't have, then writing reports, reading reports, studying notes, making charts, making overheads for our presentations in silviculture, trying to second-guess what Dr. Alm and the rest of the student body were to ask during these presentations (about which we were never right), and always wondering if this would be the day we all made it to class on time.

On our first morning we were all issued our equipment (D-tapes, 100' tapes, increment borers, Biltmore sticks, new color infrared photos) and told anything lost or broken was the responsibility of the individual it was issued to. Great, tie flagging ribbon to everything! After a quick intro-

duction to the staff, we were escorted by Ron Severs, the center's acting forester, on a tour of the five-square-mile area commonly called the Cloquet Forestry Center. The first stop was a young stand of jack and red pine. Everyone was given an envelope with a number on it. Inside was a question. We were instructed to read our question aloud and then answer the question, without any prior knowledge of the stand. "What are the three methods of harvesting?" Uh, short wood, long wood, and, uh, snip and clip. "How old is this stand?" Thirteen to twenty years. Am I right?

Through the entire nine weeks it was stressed that we were to be objective and above all act like professionals. That means wear appropriate clothing to "public" hearings, no smoking cigars in a government building, and leave the baseball caps at home.

If pressed for an answer as to whether I felt Cloquet was everything I expected it to be, I would have to say it was close, but not quite. There seemed to be much more report writing than data collecting. I had anticipated nearly every daylight hour would be spent in the field learning the latest methods in inventory, wildlife management, and other forestry related concepts. In the end, we were given a chance to provide the session coordinator, Scott Reed, with feedback, and our ideas for session improvement.

David Larson

Cloquet: a place often feared, a session of mystique to freshmen, sophomores, juniors and seniors alike. . . .

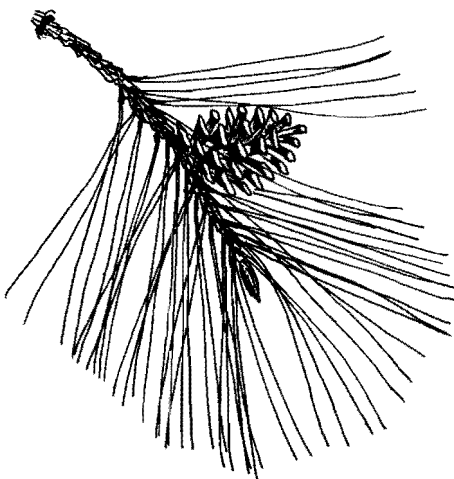
Before I was even registered for the Cloquet session, I had heard war stories of the workload, vast swamplands, and the gen-

eral nature of the session. I had also heard stories (from senior foresters and retired foresters alike) of wild parties, pranks, meeting lifelong friends and, of course, the same common complaints of workload.

When I arrived, I expected a camp set-up similar to that at Itasca, and for the most part it was. There was one vast improvement: all the cabins had indoor PRIVATE facilities...unlike those at Itasca for the unfortunate individuals in cabins 30-35.

This year's session was unique in two ways. First, it was the smallest group in history, having only 11 students. Second, given the small size of the class, we elected to do away with the cooks and mess hall system, and use our own cabin kitchens for meals. This saved money, and most people were pleased with the arrangement.....at first.

Classes got under way. The first week was aerial photography. This was basically a continuation of the introductory class in St. Paul. We were each issued a set of six week old color infrared photos. We learned that such species as black ash, red maple and American elm don't exist on the photos,



but we were able to find them in the forest. We also learned that an experienced photo interpreter can differentiate between a three year old 6 x 8 spaced plantation of spruce-pine and a three year old experimental plantation of 6 x 8 spaced spruce-pine! The next week was forest soils. Mapping soils and writing profile descriptions lead to interesting and beneficial field trips hosted by USDA-FS personnel. The third week was remote sensing/inventory. Much of this was a continuation of the first week of class, with a twist. Log scaling, grading and timber stand appraisals were fun and educational. A key point to remember is that 45% is a more acute angle than 30%, regardless of what you learned in geometry class. The fourth week: fun, fun, fun. Hydrology exercises, as determined by our group, are "the act of pouring approximately 200 gallons of water down an eight-inch hole on a loamy sand soil underlain by a gravelly sand." The operation took two hours for each of the two runs. At 0800, the ice was one inch thick in the water drum.

The fifth week was the first half of silviculture. This is the week when you are bombarded with an unbelievable amount of procedures, papers and assignments. Begin some field work and worry about time constraints for the next five weeks. The sixth week: wildlife and recreation. Wildlife class entailed performing habitat classifications for ruffed grouse, aging and sexing of ruffed grouse, and in general how to manage an aspen forest for ruffed grouse production. The east boundary-road proved to be good habitat for grouse, as witnessed by a few students this year. The seventh week: recreation and forest harvesting. Recreation exposed us to planning considerations. Harvesting was an interesting break in the routine. Trips and tours, machines, equipment and nomenclature. The eight week:

a continuation of the seventh week, more harvesting.

The ninth week: the one we've been waiting for. Silviculture entailed two presentations, teacher versus student and teacher/class versus student. Good for some, bad for many and just a headache for others. The presentations provide useful experience for public meetings, and how to deal with trouble-makers.

That's a general overview of the academic happenings at Cloquet. Other events include the Museum, a local bar a mile or so up the road (for those people who were not writing reports until 2200 hours every day). Then there is the inner working of the students. Weeks one and two were great. The kitchen got crowded week three. An unending fear of being the victim of the next prank began week four and lasted the next five and a half weeks. The cabin furniture and appliances were rearranged numerous times. A word of advice here: bring a metal filing cabinet, with lock, for past notes and folders.

The Cloquet session provides good field experience for people who have not had experience through seasonal jobs. I'd had previous experience, and did not benefit as much as some of the other students did. However, there were several things I learned at Cloquet that I feel will benefit me throughout my career.



SUMMER JOBS

ON PATROL IN THE BLACK HILLS

Sue McDonald

Dear Marcy,

Are you the culprit igniting the fires out west? Let's hear it for this roasty summer of uncomfortable sleep and long, hot, dry, sweaty working days.

Today was no different in the Hills. I believe the mercury reached 102 degrees. This morning my supervisor reminded us, the Nemo Forest Service crew, that fire danger is extreme and to stay "10-8" all day. After changing the drinking water in my fire pack, I headed out in the puke green (non-automatic) Forest Service truck. Did you have fun learning how to drive a stick-shift, Marcy? I freaked out my first day of work when I noticed that all the Forest Service trucks were stick-shift. My supervisor said, "There is no better time to learn, Sue." After a few jerky days or weeks, I got the hang of it. The roads certainly have gotten a lot smoother.

I spend a majority of my time working with the ranger. Gary is the ranger and I am the pooper-patrol. We travel around all day to the three campgrounds and four picnic areas in our district. Gary is originally from Pennsylvania, but he has put a lot of miles behind him. He is a lean fellow with sandy blond hair and a mustache; he looks like John Lennon with his glasses on.

Our day starts out at Nemo. My home for the summer, it is a small town 20 miles northwest of Rapid City. There are 50-100 residents in Nemo and I love it. It's so small I almost drove by it when I first arrived here.

This morning, Gary decided we should first check the compliance at Robaix Lake Campground. Robaix Lake is our biggest

campground, with approximately 55 sites. My favorite part of the job is driving the truck between campgrounds and picnic areas. There is nothing like the open dirt road with dust spitting in the back. Although there are not many cars out here, there are cows. You have to be careful driving, because during the summer months the Black Hills has an open range policy. This means that these large animals can go anywhere they like, including the roads. Gary and I already had a mishap with a calf.

On our drive over to Robaix Lake, we called in by radio to Custer Peak for a radio check. Custer Peak is the fire lookout in my district and our main communication throughout the day. I was fortunate enough to get up there on my own this summer. Carl, the man who operates the lookout, has been with the Forest Service almost 30 years. He has the most exciting and beautiful job in the forest -- relaxing until there is a fire. The day I visited Carl, the sky was clear blue. I could see for miles, from Rapid City to Wyoming. Carl and I were visited by a kestrel and two red-tailed hawks. I was also fortunate to see the fire spotter plane fly over the tower that day. Carl and I waved and the pilot returned the greeting.

Shortly after Gary and I arrived at Robaix Lake we visited our campground hosts, Ike and Eunice. They are from Nebraska. They make Gary's and my job a lot easier; they know what's going on in the campground, who paid their fees, whose dog is off its leash, and how to keep the restrooms free of buzzing flies.

After visiting Ike and Eunice, Gary and I make our daily rounds through the loops of the campground to check compliance. Sometimes we find a few campers trying to save \$9.00. Gary has a chat with these

folks. While he is being a ranger, I run off to check the maintenance of the most important facility of the campground: the restrooms.

The main problem I'm having this warm, dry summer is keeping the accumulation of flies out of the restrooms. Some days there will be over a dustpan full of these buzzy black critters. Other than that, I keep the restrooms clean and, correspondingly, the visitors do too.

I've received a lot of compliments from campers about my fancy work. In fact, one day while I was picking up trash around Robaix Lake, some fishermen asked me who was cleaning the restrooms this year. I told them terrific me. They commented they had not seen them this clean in years and invited me to join them for breakfast.

After spending all morning, lunch break, and a few afternoon hours at Robaix Lake, Gary and I decided to head up to Mount Roosevelt. It's in the far northeast section of the Hills. Road trip! I always love going up there, not only for the trip but for the monument at this site, a tower dedicated to Teddy Roosevelt, my favorite president. One day earlier in the summer I painted the restrooms at Mount Roosevelt. I had a lot of fun getting paint all over my hands and face. That day a storm cloud roared in over the west section of the Hills; I was fascinated by the lightning bolts.

Usually, when Gary and I go up to Mount Roosevelt, we find a lot of pollution left over from the local folks' parties. This time was no exception. The beer of the night must have been Budweiser; we collected about three cases of Bud cans. Gary recycles them, and makes two cents for every can.

The day got exhausting, so as Gary drove back to Nemo, I relaxed and took in the breeze. Right now I'm enjoying my famous macaroni and cheese dinner while

watching Family Ties on tv. I hope you're learning as much as I am this summer. It's quite the experience out here in the Black Hills of South Dakota.

Take care,
Sue

MY HOT SUMMER DRESSED IN NOMEX

Marcy Warner

Kootenai National Forest
Murphy Lake Ranger Station

Summer 1988

Dear Sue,

Sounds like South Dakota is pretty steamy. I wouldn't call it steamy here, but the nights are pretty cool. HA, HA! We'll have to get together before school starts and you can give me the rest of the details about your summer. My summer is going great. You were so right about Montana, it's beautiful! Wherever I look there are mountains, trees and the "big sky." I really want to come back out here somewhere to live someday. But I won't be taking the bus again! A day and a half is too much for me. It's not bad when you have two seats to yourself, but when you have to sit next to someone it's a different story.

It hasn't been too bad without my car out here on the job. I catch a ride to work and into town with the other people who live at the bunkhouse. I work weekends too, so I have to borrow someone's bike or see if anyone is up. The station is only about a mile away. All the people who live here at the bunkhouse are really nice. There's a total of 18 people who stay here;

a dozen of them are guys. Most of them are from Montana and between 18 and 21 years old. There are a handful who are my age. They're so funny, most of them thought I was 19 or 20. They wonder why I'm still in school after all these years, but I just told them that's the way it is back at the U of Minnesota. I asked a couple of them who go the U of Montana if they knew you, but no. You must not have been so loud back then! Just kidding. They redid the bunkhouse this past winter and so it's pretty nice. The rooms are about the size of dorm rooms. In fact, being out here reminds me a lot of my freshman year at school. You know, meeting all the people who you're around 24 hours a day. We're lucky that everyone gets along most of the time.

Guess what I get to clean? Toilets! I don't have as many to clean as you do, though. There are only two campgrounds that I go to every day to collect the camping fees, pick up the garbage, and check on the campers. We have lots of dispersed sites that I check on. There are two campgrounds called Big and Little Therriault that are about 25 miles away, with 20 miles of the way going up a narrow, winding road. That's where they took me on the first day to teach me how to drive a stick: a narrow road with no guardrails. But I've got the hang of it now and it's pretty fun. Just as long as I don't come face-to-face with any logging trucks. I've encountered lots of deer and a few moose on that road throughout the summer, and a black bear on the first trip up.

I've been playing a lot of hackysack. At the beginning of the summer there were four of more of us at the bunkhouse who played and listened to tunes after work and after dinner almost every day. We usually got in about three or four hours of hackin'. Once they started sending me on fires, my hack time dwindled.

I haven't been on a lot of different fires,

but I've been on a few that kept me busy (and dressed in nomex fire clothes) for a good chunk of the summer. I went on my first fire towards the end of July. Almost everyone was gone from the bunkhouse except part of the fire crew (they had to stay on for burning), and three of us who were not on the fire crew. Liz, Mike and I knew that we were going to get called out soon, so we grilled out that Friday night for dinner and got the call to be at the station at 9 p.m. I was both nervous and excited. They drove us to Kalispell in one of the green "rigs." In the meantime, Mike bet Liz and I five bucks each that we couldn't take a chew and keep it in for 20 minutes. So we called his bluff. Boy, was I dizzy. I could barely stand up. We were only chewing Skoal, I don't know how anyone can stand Copenhagen! To make an embarrassing story short, I made \$6.25 on the bet. How? When I was looking pretty green after about 8 minutes, Mike said I could take the chew out and I'd still win the bet. The other \$1.25 was made five minutes later when he said he'd give me that much more if I got sick. I laughed and told him I already had! Liz ended up chewing the whole time we were gone. (Well, she almost "lost her cookies" after dinner on the night before we left.)

We were gone for two weeks. We started out on the Huckleberry fire by Seally Lake. It was named for the huckleberry pickers who started it. It was a good fire for my first one because it was only 20 acres. There is no way that going to fire camp can totally prepare you for the real experience of fighting a fire. That first day was the start of learning something new every day, either about fire or about myself. After one and a half days at Seally Lake, we were sent to the Rock Creek Fire on the Selway-Bitterroot Wilderness Area, where we were spiked-out for the rest of the two weeks. It

was a beautiful area. I met someone from the U there; her name is Anne and she's working in Libby, Montana for the summer. Anyway, I could tell you story after story. I really didn't mind fighting fire, it's just a lot of hard work at times and a big learning experience.

Two days after I got back from Rock Creek, I got to go to Yellowstone. We flew there in one of those smaller planes. I got my first helicopter ride when we flew to our spike camp after one night at base camp. We were on the Fan Fire located in the northwest corner of the park. If you didn't bring your own tent along, you slept under a big fly with no sides to keep out the rain. Which it did do a couple of nights, but the fire didn't seem to notice. There was a good five-day stretch when we woke up every day with frost on the ground. It's no wonder I had a cold for most of the first two weeks.

I think it was after 13 or 14 days at our spike camp that the rumors of us getting to go on R & R came true. We were bussed into West Yellowstone for one day, and the next day we were bussed to Big Sky, a ski resort-type place. It was a great time (I'll tell you later) and nice to be back in civilization for a while.

I got to watch a bit of t.v. while on R & R. When you're in the middle of something and see it portrayed by the media, it's amazing to see how they can distort things and lead the public to and from certain issues. There were a lot of issues raised by the Yellowstone fires which need to be addressed, but by those who are qualified to discuss them and not just anybody with a little clout.

On a lighter and happier note, I saw a grizzly!!! When we were on our way back to base camp after R & R, there was a big ol' grizzly about a hundred yards from the road. Pretty neat, huh?

My last week at Yellowstone was spent at base camp and we were flown into work each day. We had to do a three hour hike out twice and were flown out the other times. I really like riding in helicopters. There's a lot more stuff I could tell you, but I'm going to shut up pretty soon and save the rest of my tales for fall quarter. Anyway, it was quite the experience. I learned a lot and met a lot of neat people.

Back here at Murphy Lake there has been action too. We've been doing road blocks to help keep people away from this fire that's sneaking towards our district. I think we might have to go to work on the line tomorrow. There are also restrictions on campfires and more restrictions to come. It should keep me busy until I have to go back to Minnesota. I really didn't get my work hours cut by coming back from being on the fires, but at least I can sleep in a bed and shower each night.

Well, Sue, it's too bad you didn't make it out here, but I probably would have been gone anyway! See Ya Soon!!!

Love,
Marcy

WORKING IN A GOLDMINE

Jeff Cordes

This past summer (1988), I took the opportunity to work as a student intern for the DNR under the encouragement of Phil Splett, my student advisor. He said that although I was an Urban Forestry student and not a Forest Resources major, the job experience I would gain would be very valuable. The student intern position was for a summer research project which was to look at the quality of aspen regeneration

from past clearcuts in the forested areas of Minnesota in a rough 50 mile radius from the regional DNR office in Bemidji. Upon my arrival at the Bemidji regional DNR office I was introduced to my immediate supervisors and given a quick rundown of what the project was to entail. To my surprise I discovered that the project was still in the conceptual stage and, indeed, I was going to be on the ground floor of putting the whole thing together. In fact I was to help develop the field data collection sheets along with Alan Jones and Richard Rossman, the regional Insect and Disease and Soils specialists, respectively.

I soon found out by the bombardment of additional field data requests that once a project is approved and the field data collectors have arrived on the scene, word begins to get around that there will be a person out collecting data, and soon everyone is approaching you with their pet projects and saying, "Well, as long as you're going to be out collecting data, why don't you check" such-and-such "for me?" What began as a simple project with the intent of just trying to determine how the clearcut aspen was regenerating was beginning to expand tremendously with several additional "tasks" tacked on.

In addition to the original project, I was to gather data for the regional soils specialist by taking core samples with a three-foot probe at every third plot. I was to check these cores for depth of organic material, depth and changes in horizons, presence of charcoal, depth to water table if noticeable, and do a 10% hydrochloric acid check on each core to check for the occurrence of calcium carbonates. In addition to this I was also to utilize herbaceous plants as indicators of soil type and quality, hopefully to complement and lend credibility to the data gathered from the soil corings. For the Insect and Disease specialist I was to dig

around the root systems with a hand trowel looking for armillaria root rot, which were to be my destructive samples. These were from the northernmost tree on every third plot. During my plot work, I was to observe any physiological or mechanical damage to the trees by a quick ocular estimate and record the type of damage, its probable cause and the height positioning on the tree. This was not the end of the fun. I was also required to collect cross-sectional cuttings from the trees to be destroyed at three-foot intervals and also at breast height, and make a quick ocular estimate of the type and percentage of the defects, if any, in the "cookie."

Now that I had an idea of what to look for, I was given the criteria of where I was supposed to look. I was told that they wanted me to take samples from three different soil types, two different age classes, twenty different sites per soil type per age class, and twenty plots per site. Things were getting out of control! I reminded my supervisor that I was only going to be working for three summer months and that I had not intended to make a career out of this particular job. If they intended for me to collect all this data they had better realize that I could not possibly get it all accomplished in one summer. I was also evidently going to use a system of determining field stocking density which hadn't been used in a published article before. This system of non-overlapping triangles was supposed to give an accurate estimate of the stocking which is independent of the age of the stand. It is basically derived from the principle of determining the area of the triangle which is formed by selecting three dominant and/or codominant trees which enclose the center plot by measuring the distances between these trees and then plugging the figures into a formula which determines the stocking per acre. If this seems confusing

to you, believe me, you're not alone. Since I hadn't taken a forest mensuration course yet, I was beginning to feel that perhaps the Minnesota DNR had intended to hire a rocket scientist and not a junior urban forester to gather and evaluate the needed data. I used the procedure a few times and found it was relatively easy to understand, once the application of the concept was undertaken. Since the system hadn't been used before, Al Jones began to get a little apprehensive, and after the first few sites he decided to add an additional task to my already massive array of measurements and determinations. He added a fixed radius plot sampling by using a 10 factor prism.

I view of all this, I still wasn't ready to go to the field yet.

I had to first review the 10-15 year old and 25-30 year old timber sale records to find clearcut aspen sales of five acres or better on the soil types which we had targeted for evaluation. This was done by getting the legal description of the timber sale and matching it with a soils map provided by Dick Rossman. It took approximately two weeks to get the field data sheets put together and the timber sales audited. Then I was ready to go actually collect some field data.

SINGING AN UNEXPECTED HIGH "C"

Jeff Cordes

It was another brilliantly sunny day, not unusual for the summer of '88 in Minnesota. I was strolling along with my field pack slung over one shoulder, a soil probe in one hand and my pseudo-tatum in the other, allowing myself the luxury of letting my mind drift and dwell on absolutely nothing. It was a beautiful day (albeit a hot one),

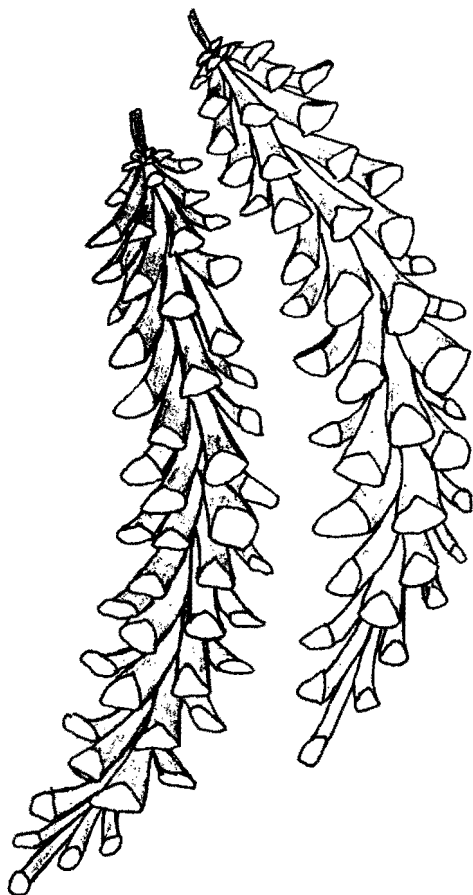
and I had no pressing deadlines for course papers to worry about. Breaking trail through the underbrush seemed almost medicinal compared to the mental rigors I had so recently put behind me at the University of Minnesota campus. I was leading my partner, Roger Hannigan, along an azimuth which I had determined earlier would lead us to an aspen stand of the correct age class to be used for the regeneration study. Roger works for the DNR as a seasonal employee during the summer on the Insect and Disease Specialist team out of the regional office in Bemidji, and teaches high school science, mathematics and English courses in a local school district during the academic school year. Things couldn't have worked out better for me; the summer job had turned out to be great and the people I was working for were exceptional, real assets as state employees.

I was letting these thoughts and other more pleasant and personal ones dance, flit and vie for attention in my mind, when I felt a burning stab on my left forearm. Not really coming fully out of my reverie, I glanced down at my arm and noticed an irate yellowjacket using my bare arm to vent his spleen. I shook the vespid wasp off (shades of entomology), and was in the process of turning to tell Roger that I had just been stung—ZZZZTT—DAMN—RIGHT IN THE CORNER OF MY EYE—involuntarily I swung my right hand to brush the wasp away and was suddenly, painfully reminded that I was carrying a stainless steel three foot soil probe in that hand. KLUNK, I almost succeeded bashing in my own skull! I felt another burning jolt on my right cheek, and being the highly intelligent forester and veteran of the Army that I am, I realized I was definitely losing on all fronts. Buddy, by now my mind had gone from Huck Finn status to Mach 1, and before I could tell my feet to

move they had me retreating 150 yards back through the brush from where we had come. I looked back towards the wasp nest to see if Roger had caught the gist of the situation and bailed out, only to find that he hadn't spent 35 years as a forester in complete ignorance; he was approximately 75 yards out in front of me and just beginning to pull up to see if I was okay. It was only then, after a few brief moment as we approached each other, catching our breath, that I was able to tell him what had happened, to which he had a few off-hand comments to make as he remained about 15 feet from me. First he said that he had learned a long time ago to follow about 30 steps back of the person breaking trail, explaining that this provided a measure of protection to the person in the rear, since any disturbed stinging insects invariably went after the person in front. Secondly, as he kept a close eye on my trousers, he offered some sound comradie advice. "If you don't desire to be stung again, you better knock those wasps off of your pant legs." Yikes! I looked down and discovered five more of the little warriors, bound and determined to eliminate my leg as an enemy to their nest which I had obviously gotten close to. I knocked them from my leg with my cap, after which they surprisingly flew off in the general direction of the scene of the crime, satiated in their own little minds that the attacker and home-wrecker had been taught an unforgettable lesson. How true! From now on Roger and I were going to switch off breaking trail. That was probably my most miserable day on the job, since we had just hiked 2-3 miles through brush and timber to reach our destination, which was just ahead, and since it was the beginning of the work day neither of us really wanted to throw in the towel on account of a few wasp stings. I must admit though that it would have made me feel a little bet-

ter if the wasp stings had been a little more evenly distributed between the two of us. My arm developed a red tender area about two inches around and my eye was puffed badly, due, I'm sure, to both the effects of the sting and the clout I had inadvertently administered myself.

Ahhh, the joys of summer employment as a student forester—what more could a person ask for out of life?



CLUBS



RRM CLUB: (back row): Erik Petersen, Steve Stenger, Dave Haugen, Steve Johnson, Marcy Warner, Romaine Nielson. (front row) David Lehman, Dean Skalbeck, Mark Braasch

RECREATION RESOURCES MANAGEMENT CLUB

Dean Skalbeck

The RRM Club started the school year by putting on the annual Fall Bonfire for the college. The event was a success, with a good turnout by students, staff and faculty. A good time was had by all those in attendance.

The next event for the club was the annual fall picnic held at Dr. Knopp's house. This year there was a special guest in attendance, Mr. Rodney McCrea from the North Country Trail Association. Mr. McCrea showed slides on the North Coun-

try Trail. This gave information on how much has been completed, what more needs to be done, and dates for which they are shooting to complete the trail.

In early November the club ventured north to work on its adopted portion of the North Country Trail. Despite being late in the season, the weather was perfect. There was a great turnout, showing that the club is expanding. The trail survived the winter without any major damage.

The club started a recycling program for pop cans brought into the NRAB student lounge. This effort is part of the fight against solid waste buildup, and we hope it will expand to paper recycling in the very near future.

On February 23, Mr. Ron Hanes, Operations Manager of the Minnesota Department of Natural Resources Division of Parks and Recreation, gave a talk on the state of the State Parks, funding, and legislative processes involved in acquiring these funds. Everyone in attendance benefitted from this excellent talk.

This spring the club plans on trail maintenance work some time in April, depending on snow conditions. The club will make this a camping trip as well. Interest has also been expressed in a hiking and camping trip to Voyageurs National Park in northern Minnesota.



PIMA: (back row): Steven Corley, Randy Van Marter, David Kulm, Jack Bellanger, Brian Walukiewicz, John Hermann, Ruth Anne Keene, Dr. Robert Rouda. (front row): John Kroll, Andre LaBrash, Donald Labo, Jeffrey Martens, Norren Jonason.

PAPER INDUSTRY MANAGEMENT ASSOCIATION (PIMA)

Upon the request of Dr. Robert Rouda, Paper Science and Engineering Program Director, and Mr. Arthur Rankin, Senior Production Associate — Appleton Paper, we at the University of Minnesota have

been granted the honor of being the first ever Student Chapter of PIMA. To the professional society members and the rest of those who helped, we wish to express our sincere appreciation.

Accompanying this article is a picture of those student members able to take part in an enjoyable evening at Dr. Rouda's home. A good time was had by all and our

thanks to the Rouda family.

Other Activities:

- Our members and the student TAPPI chapter are involved with presentation of an educational workshop leading to merit badges for the local Boy Scouts.
- Fundraising for student workshops, guest speakers, and a spring picnic via members' coffee cup sales.
- Involvement in campus-wide student interests via our representation on the Student-Faculty Board.

Goals:

- Help provide for students' early understanding of and appreciation for professionalism and increase our involvement in the industry we will become a part of.
- All in all this has been a great year — our congratulations and best wishes to graduating seniors, and we look forward to next year.

FOREST PRODUCTS RESEARCH SOCIETY (FPRS)

Good news! The Forest Products Research Society Student Chapter has been revived. A University of Minnesota chapter was originally formed in 1977. At the time, it was combined with the Forest Products Club which had been a student organization since the 1960s. The Forest Products Club/FPRS Student Chapter was active through the mid-1980s but interest waned and, a couple of years ago, the group slipped into inactive status.

Fortunately, during the past year interest has picked up again and thanks to the efforts of a number of students, the chapter has been reorganized. The initial meeting, held in late January, was a success with 15 students attending. Based on this level of interest and the many good ideas expressed by those in attendance it looks like the chapter is off to a great start. The organization has been officially registered as the Forest Products Research Society Student Chapter (for simplicity, the Forest Products Club designation was dropped) and the following new officers have been elected:

President: Chad Collmann
Vice President: Kurt Dahlquist
Secretary: Dan Hansen
Treasurer: Jeff Brinkhaus

These individuals and all of the students who attended meetings or have otherwise supported this reorganization are to be congratulated. FPRS student membership and student chapter involvement provides numerous benefits and the experience can be invaluable in helping to make the transition from student to gainfully employed forest products professional.

Goals and objectives for the organization are still being discussed but the group has already worked out a number of industry visits. Several members went to Weyerhaeuser's St. Paul facility on February 27 and March 2. They toured the operation and were given a demonstration of the new Weyerhaeuser Design Center which employs leading edge technology in computer aided design to help retailers sell projects such as decks and garages.

A tour of Anderson Corporation (windows) in Bayport is being planned for spring quarter. Look for much more in the months ahead!



FPRS: (left to right) Dan Hansen, Jeff Brinkhaus, Chad Collmann, Kurt Dahlquist, Harlan Petersen (advisor)

TECHNICAL ASSOCIATION OF PULP AND PAPER INDUSTRY (TAPPI)

Ruth Anne Keene

The student chapter of TAPPI provides an opportunity for students to get involved and become familiar with the pulp and paper industry.

In September, Ruth Anne Keene (president) attended the national TAPPI student chapters meeting in Chicago. Although primarily a leadership training program, this meeting also served to generate ideas for activities for the student chapters, and also to unite the student chapters. One

result of this meeting, which all the student chapters are now working on, is a project to help restore the former beauty of Yellowstone before the devastating fires of last summer.

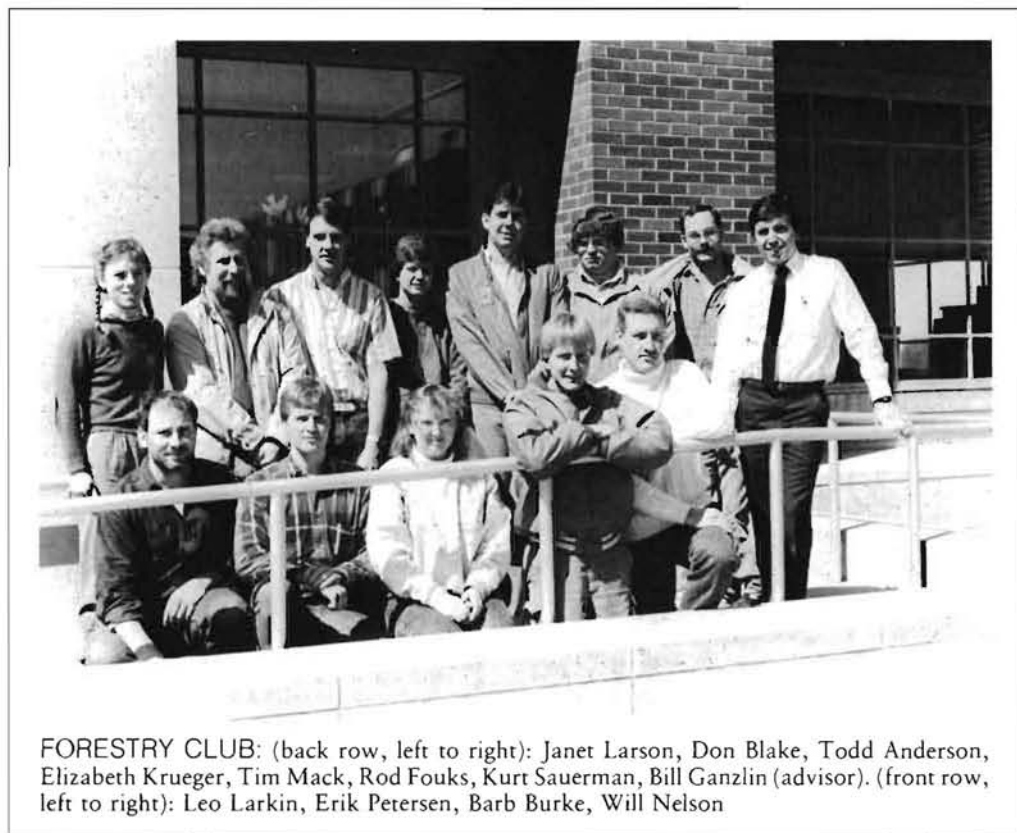
As a service to the students, TAPPI again has a test file containing most of the classes required for Paper Science and Engineering students. The entire test file disappeared about a year ago, and suddenly this winter reappeared in TAPPI's desk drawer.

In May we will host our second annual Boy Scout Merit Badge program. Paper Science and Engineering students will give a presentation to the Scouts on the history and methods of papermaking. The Scouts will then make their own handsheets.

Also in May we will have a picnic featuring food, drinks, sports and fun! This will be a perfect opportunity to introduce the new freshmen and sophomores to the program.

I would like to take this opportunity to

thank Randy Van Marter, Vice President, Andy LaBrash, Secretary, and Don Labo, Treasurer, for their work this year. Of course, a special thank you also goes to Dr. Rouda for all his help and support.



FORESTRY CLUB: (back row, left to right): Janet Larson, Don Blake, Todd Anderson, Elizabeth Krueger, Tim Mack, Rod Fouks, Kurt Sauerman, Bill Ganzlin (advisor). (front row, left to right): Leo Larkin, Erik Petersen, Barb Burke, Will Nelson

FORESTRY CLUB

Elizabeth Krueger

Every trip has a day when the tide turns, the days on the road are mostly behind, and the light is visible at the end of the tunnel. On this year's Southern Tour, it fell on Tuesday, the day we endured through the rain and the stuffy conference room on three

hours' sleep. For the Forestry Club, this year marked the same sort of turning point. In many ways it was not an easy year. There was more work to be done than usual and fewer people to do it. However, somehow we came through it and find the future looking positive.

The year began with Conclave. We had never thought it could be so much work to organize an event like that, and there were

always more details to take care of. The date was only four weeks into the quarter, and much of the work had to be done over the summer; this was made more difficult by the geographical separation of the organizers, due to their summer jobs. Long distance telephone bills skyrocketed. When the day finally came, many members of the Club, other students and alumni provided help and hard work to make Conclave a successful event.

We had not yet recovered from Conclave or caught up on our homework when the Christmas tree lot loomed. This year the tree cut at Carl Vogt's tree farm was a one-day event instead of an overnight. A good group worked hard all day, surviving the annual ride on Carl's mud-splattering trailer, though fewer than ten of us remained to load and unload the truck, finishing up at 1:00 in the morning.

The tree lot was a success, but we had our doubts for a while (as I am told is the case every year). This year was different in that we had a lot of trouble getting Club members to staff the lot before and during finals week. Many mornings and afternoons the lot never got opened, and we felt that we lost a fair amount of business. On our busy weekends we were saved by the generosity and hard work of a number of alumni, including Marc Roberts, Robb Collett, Lois Pfeffer, Paul Buck, Chris Schulte, and others. Although we had trees left over and stayed open until Christmas Eve day, the lot made money, and we learned lessons that will be helpful next year.

Foresters' Day went well for the most part, involving almost all of the Club members and a number of faculty and graduate students. Don Mueller was an excellent speaker at the banquet. Joe Deden, forester at the Southeastern Minnesota Forest Resources Center, was given the Forester of the Year award. The pancake

breakfast the next morning was well attended both by the groggy and the wide-awake. The group at the field events was fairly small (at least almost everyone won a prize), though a mean broomball game pitting faculty and grad students versus undergrads wore everyone to shreds later.

Events the previous spring included Arbor Day tree sales, organization of an intramural softball team, and a weekend field trip to a DNR fish hatchery and the Forest Resources Center mentioned above. Held in May, this was a very interesting trip, educational and fun, and a spring field trip will hopefully become a new annual event.

Changes in the Club have come about because of various factors. Enrollment in the College and the traditional forestry curriculum has been declining for many years. Tuition and other costs have risen, requiring most students to work while attending school. Many of us are not the stereotype of college students, 18- to 21-year-olds just out of high school; many are older, returning students, perhaps working on a second degree or choosing to start higher education now. All these factors combine to produce a group with less free time and more purpose and direction, and the Forestry Club has had to cope with these changes. Possibly the number and scale of events which the Club has usually hosted is too great for the current availability of the students, and if this is the case, we may have to scale down some events or do away with others. At the same time, it's possible for us to initiate new events, such as the Spring Trip, which appeal to the current students and which they can fit into their schedules. The Club still has a place and purpose in the College, and will continue to serve the needs of the changing group of students.

1989-90 Officers:

President: Todd Anderson

Vice-President: Janet Larson
 Assistant Vice-President: Barbara Burke
 Treasurer: Don Blake
 Secretary: Elizabeth Krueger

Sergeant-at-Arms: Leo Larkin
 Historian: Erin Sutter
 Faculty Advisor: Bill Ganzlin



FISHERIES AND WILDLIFE CLUB: (front row, left to right): Rob Mossman, Quentin Kramer, Lyle Buss. (middle row, left to right): Neil Vanderbosch, Barbara Farr, Christine Leuck, Brenda Taylor, Andrea Schwartz, Bill Blythe. (back row, left to right): Dave Mickelson, Perry Ward, James Muck, Kathy Smith, Brent Kuhl.

STUDENT CHAPTER OF THE WILDLIFE SOCIETY

Perry Ward

The Student Chapter of the Wildlife Society, better known as the Fisheries and Wildlife Club, has had a jam-packed year of excitement. The club members this year have worked hard to bring the organization to its full potential. The fall picnic brought

out the hardest volleyball enthusiasts and the best fish and wildlife trivia experts. Club members organized a tour of the Raptor Rehabilitation Center. A trip is planned for this spring to visit a waterfowl park in northern Minnesota and club members are looking forward to sharing information with other state clubs at Conclave '89 in Missouri.

Fund raising really took off this year with beautifully designed T-shirts and sweat

shirts, not only to club members but to the public during Wildlife Week.

Our president, Bill Blythe, a fisheries senior, has done an excellent job of organizing meetings and arranging pertinent speakers. Kathy Smith, wildlife junior and vice-president, suggested and arranged the

shirt sales along with the design artist, Barbara Fair. Jim Mussell, wildlife senior, kept the club's dollars in check as club treasurer.

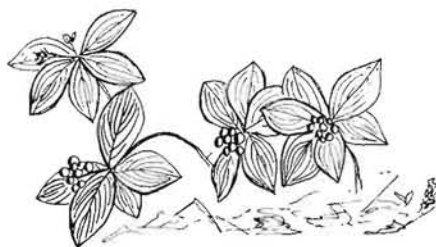
This year for the club can be considered a landmark due to a renewal of enthusiasm and participation of members.



GOPHER PEAVEY YEARBOOK STAFF

(back row, left to right): Eric Nordlie (Advertising Manager), Jeff Cordes (Staff Writer), Al Lundstrom (Assistant Photographer). (front row, left to right): Chris Siems (Staff Writer), Beth Krueger (Editor), Steve Tillmann (Editor).

Illustrations throughout the *Gopher Peavey* are by Janet Larson.



SAF NATIONAL CONVENTION

John Elholm

Where was Todd? 45...30...15 minutes before we would take to the sky toward New York, and our president, the one with all of our important information (and money), had not arrived at the airport yet. As the plane started boarding, Todd ran up; he had overslept.

With a start like that, the trip had to get better, and it did. It got much better. In fact, the trip to the SAF National Convention, in Rochester, New York, was one of the best experiences I have ever had.

I don't think that any of us realized how well we represented Minnesota until we gave our names at the hotel. Anderson, Johnson, Petersen, Elholm...ya, we're from Min-ne-sooooo-ta. The Scandinavian delegation finished checking in, and then began to figure out how we were going to get to the convention from our hotel. Nobody at the hotel knew anything about a shuttle, so we rented a car. This proved to be extremely useful during our visit.

The convention was exciting. There was always something going on. Students were well provided for, through the special sessions and the hospitality room. It was disappointing, however, that the student tour was cancelled. The first day we registered, and tried to take in as much as we could. We visited the exhibit hall, which had a variety of booths from different colleges and companies. The companies displayed new innovations, and the colleges had information on their graduate programs. The amount of information was impressive. We also visited the student hospitality room and began meeting students from around the country. Syracuse was the host school, and they did an excellent job keeping us informed and comfortable.

The evening activities included the President's reception for students and the Icebreaker. Both of these events served to help us meet other people. Some of the people we got to know were students from Stevens Point, Washington, Virginia Tech, and others. We found ourselves doing a lot of talking with students from Maine, including Cindy (the editor) and the rest of their yearbook staff. For the most part they were nice people, but they seemed to think that Maine would always have the number one yearbook. We received the number two title last year. At the convention they also reminded us that Maine beat Minnesota in hockey in 1988. Since Minnesota beat Maine in hockey this year, does it mean that there will also be a switch in yearbook

standings? Only time will tell.

On Monday we went to the awards banquet, and received our yearbook award. Later in the day we took in some of the general sessions. During the course of the convention, there were sessions and working groups for every interest. Our University held their alumni meeting Monday night. It was nice to briefly step back into 'Minnesota' and meet many of our predecessors. It was also nice to see that there is life (and jobs) after graduation. I hope there are some jobs left for us! We concluded the evening by going to the Career Opportunity Forum, and then by taking in the sounds of the Cranberry Lake Jug Band.

Since the student tour was cancelled, we got together with students from Maine and took some time Tuesday to visit Niagara Falls. It was especially nice sharing the view of the falls with people from a different part of the country. We returned to the convention, took in another session, and then made our way back to the airport and Minnesota.

The SAF National Convention was incredible, and is an experience that all SAF students should have. We appreciate the support that the college gave us this year, and I hope that we will be able to send larger delegations in the years to come. Although I touched lightly on what happens at a convention, the only way really to know what happens is to go to one. The next National Convention will be held September 24-28, 1989, in Spokane, Washington.

SPRING TRIPS

WILDLIFE SPRING FIELD TRIP

Perry Ward

The Spring Wildlife Field Trip, March 18-26, provided wildlife students with an excellent opportunity to witness the wildlife management practices and controversies of the western U.S. This informative and enjoyable road trip was led by P. J. and Abby White. The first stop was Wind Cave National Park, South Dakota, to see a prairie dog town, bison and mule deer, and to learn about grassland management practices. Next stop was Ocean Lake, Wyoming, to view waterfowl and to study the management of the reservoir. Then it was up to Whiskey Basin, Wyoming, to witness bighorn sheep on their wintering grounds. The two remaining days in Wyoming were spent touring and comparing the National Elk Refuge and the state-operated

elk feeding grounds. Also, an afternoon was spent with a biologist at Grand Teton National Park discussing conflicts within and about the National Park system. On the way out of Wyoming, the group stopped at the Bureau of Land Management in Rock Springs to visit corrals and discuss feral horse management. From there, it was on to Grand Island, Nebraska, to wake up with sandhill cranes and talk with members of the Platte River Crane Trust about issues surrounding the river and wildlife and human survival. It was here that the group got a glimpse of the endangered whooping crane. The final stop was Sand Lake Wildlife Refuge in South Dakota to have a short discussion on waterfowl management and a tour of the refuge. Overall, the trip was a unique and unforgettable experience for all.

FOREST PRODUCTS SPRING FIELD TRIP

Chad Collmann and Jeff Brinkhaus

Once again this year the Forest Products students went on the annual spring tour. The group consisted of students with specialties in Paper Science and Engineering, Marketing, Production Management, and Wood Science. The tour provided the group with an overview of the industries throughout Minnesota and Wisconsin.

The students were filled with anticipation as they boarded the bus at Kaufert Lab on the morning of Tuesday, March 22. Some of the very interesting stops included Potlatch, Diamond Match Company, Lake Superior Paper Industries and Weyerhaeuser. After a stimulating daily schedule, the group sought to unwind by patronizing the local Wisconsin establishments. A good time was had by all! Overall the experience was valuable and we will all remember it for years to come.

SOUTHERN FORESTRY TOUR

Elizabeth Krueger

Participants:

Bob Allen	Ji Hong Kim
Todd Anderson	Tim Mack
Ruby Anderson-Barker	Romaine Nielson
Barbara Burke	Amanda Sjoquist
Rod Fouks	Tom Wojahn
Dave Haugen	Advisors:
Beth Krueger	Bill Ganzlin
Janet Larson	Ron Severs

"Whoa, Billybob!" Ron exclaimed over the c.b., "looks like we got a dillo up here!"

Instantly we crowded to the windows. The passion pit, as we called Ron's gray van with suggestively dark glass and bright red interior, was making an unscheduled stop. Bill put on the brakes. Bob, Ruby, Tom and Janet were already out in the dusty sunshine, crowding with morbid fascination around the departed armadillo. "Lemme out," demanded Dave, pushing past me. Ruby nudged the dillo with her toe.

It was Wednesday, the fifth day on the road. Since Saturday morning we had all seen new parts of the country, learned new things about forestry, and survived each other's constant company. We made the traditional stop at the Catfish Inn and made friends in Crossett, Arkansas, where every morning we had breakfast at Brown's Cafe and Fish Market; by the third morning the waitress was serving us homemade mayhaw jelly and sending Buford out to fetch us orange juice. Among our greater discoveries were that there were no postcards in Crossett, and the reason why Bob always kept a few quarters in his pocket.

Many interesting things had happened while we stayed in Crossett. We saw widely differing aspects of southern forestry, from the Forest Service's southern experiment station and its many kinds of management to Manville and Georgia Pacific and short rotations. That morning we'd left the seemingly perpetual clouds of southern Arkansas, and as the miles passed, the blue sky opened up ahead. The sun was shining as we drove into the Ouachita mountains. We passed golf courses and catfish ponds and big summer homes, and finally came to Bonnerdale. It was in the heart of tourist land, but being March it was still quiet, except for us. Bill and Ron got their maps as we spilled out at the Bonnerdale store and asked directions. It seemed there was a shortcut to our destination, Crystal Springs, though the maps didn't show Forest Service roads. After a while Bill returned to us. "No problem," he said. "Ron's got it down."

We had been on this dirt road for half an hour now, cruising through beautiful hardwood forests, up and down hills, and past a few small farms. The only traffic we met were a few trucks with dillo guards on the grills. The lowering sun should have been on our left, but was persistently more in our eyes. "I think we should have taken that turn back there," said Tim, in the navigator's spot. "Well," said Bill, driving, "that's possible," as Ron's van careened around yet another gravelly bend. The passion pit was on its way somewhere, fast. Then

we encountered the armadillo.

It was pretty well mummified. Ruby turned it on its back and Janet leaned over, always curious, though a little more wary since the attack by the not-quite-dead copperhead. I heard a loud rustling and turned to see Dave, back in the van, pawing among coats and bags that littered the floor. He returned in a minute with a paper towel. "Here, get a picture of this," he said to Todd, handing over his camera. "Oh you're not gonna—" I began. "Hey, you could get leprosy from that thing," said Rod, trying to put on a serious face, as Dave wrapped the paper towel around his hand and picked up the dillo up by the tail. He held it at arm's length. "I'm glad he's not riding in our van," Bob said to me.

This was our only encounter with the famed armadillos of the south. We never did see an alligator, though Ron went out one night and found deep-fried gator to go with his crawdads. When we were finished with the road kill, we put it back for the next group of lost tourists, climbed in the vans and went back to wondering where this road was taking us. In another half an hour we found out. The gravel met the blacktop near Caddo Gap—the scenery began to look familiar, and ten miles later we were in Bonnerdale again.

By taking the "long" route, we were able to get to Crystal Springs this time. We found our Forest Service camp in the pitch dark. Two-thirds of the group was afraid of having dillo nightmares and went into town to get motel rooms. The rest of us built a fire, brought out the coolers and spent the night in the woods under a full moon. Camp Clearfork and the Ouachita mountains were a nice change from the Crossett motel's scenic view of the main logging truck highway. It didn't have a Walmart, but we did find our Leading Crystal in a quartz mine there, and it got us home with no more detours.

CONCLAVE '88

Dave Haugen

Friday, October 21: I had just gotten off the phone with Todd Anderson. It was 6:30 in the morning, but I couldn't sleep. It was the first day of Conclave; just thinking about all the work that needed to be done kept me awake. I figured that Todd, my co-chairman, wouldn't be able to sleep either. Months of planning had gone into our effort to host the 37th Annual Midwestern Foresters' Conclave, and to-day we would find out if we were ready.

The plan was to meet at NRAB (the new forestry building), load up the equipment and head for the site at Welch Village Ski Area. Although this seemed like a good plan, no one was quite sure of the departure time. Was it 8:00? No, maybe 9:00. Or 10:00. We finally got rolling at 10:30. We were glad to be on the way, and our thoughts turned toward setting up the field events. I knew this would take most of the day, but it was early enough yet. . . . or was it? As we entered the Welch parking lot, we saw we had been preceded by two visiting teams, who were now sleeping in the cabins. We were a little embarrassed at being late, but then, they were early.

Setting up the field events went well. Club members including Jeff Cordes, Gregg Hove, Ruby Anderson-Barker, Leo Larkin, Tim Mack, Steve Johnson and others worked hard, and needed only two tries to set up the new cant stand correctly. Bill Ganzlin, our faithful advisor, gave us a hand. Phil Splett and Nancy Miller set up the traverse and pace course. And I can't forget the 'three amigos', Ralph Grieling, Mark Johnson and Don Mueller. These alumni gave us their time, skill and experience. Without them, Conclave would not have been as successful or fun as it was.

As the day progressed, more visiting teams arrived and were checked in. The final touches were put on the events field; then Ralph, Don and Mark recruited help to build the bonfire for later on that evening. Barb Burke, Janet Larson and Steve Stenger worked in the kitchen preparing supper. At dusk, the teams met at the chalet for the first of the weekend's excellent meals. The air was full of excitement and box-elder bugs as the team members got acquainted.

By 8:30, the bonfire was going strong. When the Southern Illinois group brought out a guitar and a banjo, I got my guitar and joined in. The captains' meeting began at 11:00; I was hoping for a short meeting, but it wasn't wrapped up until sometime after midnight. By then, everyone was satisfied with the rules and the few minor changes that had been made. The long day was catching up with everyone, but of course there are always a few diehards who have to stay up all night. I left them at the bonfire and went to bed.

Saturday: The Minnesota team, staying in the main lodge, was awakened by the smell of eggs, bacon and coffee. The other teams were not so lucky; they were awakened by me and Mr. Megaphone. The mood at breakfast was mixed. Some people had gotten more than a couple of hours of sleep and were looking forward to the day, while

others looked like the cast of *Night of the Living Dead* and could only hope for the best. The judges finished their meeting at 8:00; the events began with the traditional bucksawing, and continued through the day with log rolling, bolt throwing and other tests of skill and brute strength.

The day belonged to the team from Southern Illinois University, but the Minnesota team did have some bright spots. Erik Petersen placed third in the traverse, Mark Braasch took third in wood identification, and Janet Larson and Romaine Nielson placed first and third in the dendrology quiz. After dinner and the awards presentation, we cleared the tables from the floor and prepared for the dance. No one left before the dance as in previous years, so the dining room turned out to be a little crowded; but everyone had a great time, and as I watched I was glad to know that most of the hard work was over and the Club had put on a successful Conclave.

Sunday: Morning came too quickly. After breakfast it was time to say goodbye to all those who had come; this is the hardest thing about Conclave, but there's always next year.

In closing, I want to thank all the Club members who helped put this Conclave together, and to those mentioned above add John Elholm, Dean Skalbeck, Alan Pidde, Cindy Pierson and Elizabeth Krueger. I also want to thank John Bell, Bill Ganzlin, Phil Splertt, Bob Hanson and Scotty Scholten for helping with the judging. To you, the reader: if you want to experience a Conclave, come along with us in 1989, when the University of Missouri will be the hosts.

CHRISTMAS TREE CUT

Cindy Pierson

'Twas the night before the tree cut, and all through
the land
not a saw blade was cutting on the Anoka plain
sand.

We students all rested so snug in our beds
while visions of scotch pines danced in our heads.

This year's Forestry Club Christmas tree cut was held the third weekend in November. I had never been on a tree cut before, so after I had hit my snooze alarm a few times I remembered where I was supposed to be and woke up in a hurry. I was afraid I might be late. Instead I was one of the first to arrive at the meeting place! We drove up to the tree farm, back on a gravel road, and got out of our

cars in the middle of a field of small trees.

When what to my wondering eyes should appear,
but a truck and a trailer, in need of repair!

Carl Vogt was the driver and ready to go;
I knew in an instant all the stories were true.

Carl took us out among the trees and pointed out the ones to cut. This kept us busy for a long time, while we also dragged the trees to the sputtering baler.

We were all dressed up in wool and in Sorel boots
All covered in sap now from dragging the loot.

We cut and baled all morning and part of the afternoon, and then made a trip to the loading area with a trailer full of baled trees. The semi that was to haul our trees to St. Paul hadn't arrived yet, so we built a bonfire and cooked supper. Carl got started reminiscing about former students and school days gone by.

We laughed and we joked while the sky filled with
smoke

And soon found it later than we had hoped.

The semi arrived round about eight
The work now began even though it was late.

We unloaded the truck of its some 600 trees (finding the BIG red pines at the very bottom). Then it was time to load it with 600 other trees—ours. It was a long haul, and at the end we jumped in our cars and drove to St. Paul to unload the truck one last time into the lot.

Round about midnight our toiling was done—
We looked at each other and knew Christmas had
begun.

CHRISTMAS TREE LOT

Dave Haugen

It would be easy to say that the Forestry Club's 1988 Christmas tree lot ran into its fair share of problems. But I try to look at the tree lot as a unique experience out of those we have here at the college; it's a place to meet the people you see at school and get to know them outside the classroom. If you're lucky, you might even find yourself working alongside faculty members, who you will find to be more than just term paper and exams. The tree lot also offers us a chance to interact with the community, and even practice those communication skills we've been learning. Of course, running a tree lot also shows us

how to run a business, or how not to run a business. It's a learning experience and always fun. I'd like to thank all the people who helped with this year's tree sales; and I'd also like to invite anyone who

didn't get a chance this year to stop down next December. I know you will have a good time and make a few new friends.

THE LAST HOPE FOR MANY INJURED BIRDS OF PREY

THE RAPTOR CENTER

The Raptor Center at the University of Minnesota is the largest medical facility in the world for the care and treatment of raptors (birds of prey) and other species of rare or endangered birds. The Center recently opened a new building on the St. Paul Campus of the University, providing a 20,000 square foot facility complete with outdoor aviaries, educational displays and exhibits with live birds, an auditorium for demonstrations, and indoor flight pens, as well as state-of-the-art treatment and surgery suites. Although part of the College of Veterinary Medicine of the University of Minnesota, the Raptor Center is funded almost entirely by private contributions and grants from foundations.

The existence of the Raptor Center can be traced to the dedication and perseverance of two men, Dr. Gary Duke and Dr. Pat Redig. The program began in 1972, as Dr. Duke and Pat Redig, then a veterinary student, conducted a research project to study the digestive system of owls. This study was designed to compare the digestive efficiency of grain-eating birds with meat-eating birds. To obtain raptors for this research, Duke had requested the Minnesota Department of Natural Resources to send him any injured owls that people recovered from the wild and turned in to authorities. At this time, Redig volunteered to take care of the injured birds. He felt that some of the owls could be saved and suggested they try to repair their wounds and set them free.

In 1972 little was known about the type of anesthesia or dosage level that could be tolerated by the highly sensitive birds of prey. Within a year the two men had determined anesthetic dosages and developed surgical procedures that were instrumental in saving the lives of 120 raptors. As word of their success spread throughout the state, the sick bay filled with raptors such as kestrels, red-tailed hawks, bald eagles, great horned owls, and barred owls.

Recognizing the merit of their volunteer undertaking, the University of Minnesota gave Duke and Redig space for a clinic. By 1974, the project was

off to a good start, but had an uncertain future. Gary Duke started writing grant proposals and encouraged Redig to go on to receive his Ph. D. In the spring of 1974, the Mardag Foundation came through with the needed support. The Raptor Research and Rehabilitation Center was officially born.

Since that time, over 4,500 birds have received treatment at the center. Of the birds admitted, nearly 45 percent recovered completely and were returned to the wild. An additional 25 percent recovered, but retained some permanent disability that prevented them from ever being released. These otherwise healthy birds were placed in captive breeding programs or were used in educational programs. In 1988, the Raptor Center admitted 548 birds. This included 55 bald eagles, 12 peregrine falcons, five ospreys, 83 red-tailed hawks, 72 great horned owls, and 43 trumpeter swans. Over 40 percent of the birds were returned to the wild. The Raptor Center has provided bald eagles for release in states all over the country, ensuring that healthy populations of our national symbol will remain in areas other than Minnesota, where the eagle population is stable. Additionally, the Center has been instrumental in reintroducing endangered peregrine falcons throughout the upper midwest. Raptors have been provided for the Federal Express ads and national television programs such as Jacques Cousteau, Sesame Street, and Newton's Apple.

Today, surgical, anesthetic, and treatment techniques pioneered at the center have been adopted by veterinarians throughout the world. The knowledge gained has benefited people as well. Raptors are at the top of the food chain and are good indicators of the health of our environment. The center has helped the public become more aware of the importance of preserving raptors and raptor habitat as essential elements of a healthy ecosystem.

SCHOLARSHIP RECIPIENTS

COLLEGE OF NATURAL RESOURCES

The College and Departmental Scholarship Committees have awarded the following 1988-89 scholarships:

1988 DAYTON KIRKHAM SCHOLARSHIP RECIPIENTS

NAME	HIGH SCHOOL	LOCATION	PROPOSED MAJOR
Brian Collins	Central High School	Lacrosse, WI	Fisheries & Wildlife
Gerald Daoust	Jefferson High School & Normandale Community College	Bloomington, MN	Forest Resources
Christian Howe	Humboldt High School	St. Paul, MN	Fisheries & Wildlife
Carol Pearson	Normandale Community College	Bloomington, MN	Fisheries & Wildlife
Karen Terry	Butler & Indiana Universities	Indianapolis, IN	Fisheries & Wildlife
Erin Sutter	John F. Kennedy High School	Bloomington, MN	Renewable Resources
Wayne Worthley	Truman High School	Truman, MN	Forest Resources

JOHN ALLISON SCHOLARSHIP Christian Siems	RALPH L. LINDGREN SCHOLARSHIP Janet Larson	BUCKMAN LABORATORIES INC.— HENRY SCHMITZ/FOREST PRODUCTS ENGINEERING SCHOLARSHIP Edward Krebs
ROBERT C. BERNARD SCHOLARSHIP Timothy Anderson	OSCAR MATHER SCHOLARSHIP Kurt Dalquist	MULROONEY MEMORIAL SCHOLARSHIP Lance Wasniewski
BOISE CASCADE SCHOLARSHIP Rodney Fouks Peggy Mlinar	KEN MERRIAM SCHOLARSHIP Susan McDonald	ANDERSON CORPORATION Mark Keller Timothy Knox Timothy Murphey
R. M. BROWN SCHOLARSHIP Khiam Yung Lin	WILLIAM R. MILES SCHOLARSHIP Timothy Mack	BLANDIN PAPER COMPANY Thomas Edgren
CAROLIND SCHOLARSHIP Donald Blake Timothy Mack Stephen Tillmann	MINNESOTA FORESTRY ASSOCIATION SCHOLARSHIP Eric Nordlie Jeff Cordes	BOISE CASCADE CORPORATION Scott Rogers
E. G. CHEYNEY SCHOLARSHIP Raymond Rainbolt	ROBERT D. PETERSON SCHOLARSHIP Christian Siems	H. B. FULLER COMPANY John L. Holahan
CALEB DORR SCHOLARSHIP Anthony Miller Christine Penney Carol Pearson Janet Larson	HENRY SCHMITZ LEADERSHIP AWARD Todd Anderson Dean Skalbeck Elizabeth Krueger Ruth Anne Keene	NALCO CHEMICAL CORPORATION John Kroll
EDWARD EVERETT SCHOLARSHIP Lyle Buss Timothy Murphy Paul Pence Perry Ward Janet Larson Steve Holaday	AUGUSTUS SEARLES SCHOLARSHIP Susan Wille Margaret Eliason	NORTH CENTRAL DIVISION PIMA Ruth Anne Keene
FEDERATED GARDEN CLUB SCHOLARSHIP Janet Larson Cathy Dybiec	FRANK SHEARER SCHOLARSHIP Teresa Paszek	POTLATCH CORPORATION Steve Corley
ROBERT L. GOUDY SCHOLARSHIP Carol Peterson Christine Penney	KEN WINSNESS SCHOLARSHIP Dave Haugen	WALDORF CORPORATION Charles Rochford
SAMUEL GREEN SCHOLARSHIP Stephen Tillmann	HELEN A. YOUNG SCHOLARSHIP Peter McLeete	APPLETON PAPERS AND LAKE SUPERIOR PAPER INDUSTRIES Steve Koepke
	FOREST INDUSTRY FRATERNITY OF MINNEAPOLIS/ST. PAUL Ruth Gunard Mark Weegman	PACIFIC SECTION OF TAPPI David Kulm
		J. DONALD SMITH AWARD Russ Van Horn

CHANGING TIMES: THE LADY OF THE WOODS NOW WEARS POPCORN PERFUME

Christian Siems

Tuesday. St. Paul campus of the University of Minnesota. Yep, that's right. Popcorn day. Six bits for a large cardboard cup of tangy, lightly salted, delicious popcorn. Myself, like many of my friends on a college budget, I simply call it lunch. Sometimes dinner too. It might not seem like that big of a deal, but somehow popcorn lends a certain carnival atmosphere to a regular, ordinary weekday. On popcorn day, the smiles are brighter and the steps are lighter.

Anyone who has ever shared a special, close moment at a drive-in or a tender slow dance understands just how important the proper perfume can be. It can sweep you away to an entirely new consciousness, to new heights of awareness. At least that's what I've heard. Anyway, it all has to do with the implications of scent.

You see, the aroma of popcorn has changed the face of our forests forever. The scent of popcorn hanging heavy on the air traces history by shading the color and intensity of our sunsets. Our increasing awareness as foresters is sweeping us into an age of greater challenges, challenges that will require all the wisdom we can acquire, and more importantly spread, to overcome.

By way of illustration, please come along with me on a little popcorn odyssey, a journey far into the future.

* * *

Our odyssey starts with a ride to my favorite woods, a spot somewhere smack in the middle of what the original growers of maize once called the Big Woods, free and wild. For the most part, these woods are no longer free nor wild, but they are close: deer and fox, owls and hawks. I park alongside the county road, and from there we walk two miles along a railroad right of way. The grasshoppers buzz their fans in retreat as we approach. It is early September, and the sun is beginning to hide behind the upper branches of the forest in front of us. Overhead, Canada geese sound off. Still early in the autumn, their alignment is loose. They are not yet hurtling themselves southward with the breakneck precision of October and November. Yet after they pass, a crisp breeze floats down around us, reminding me to pick up the pace of our trip. Night is coming on, then deep autumn, then winter. We duck into the woods. The forest before us is huge, wild, and old. Two deer stand on the path waiting for us,

a tremendous buck and a slender, graceful doe. My short reign as your guide ends here, where the real forest begins.

The deer will take us through their land, the forests of yesterday, untouched, unharnessed, unfettered. We pad silently alongside our guides on a winding, often faint path through a pine forest with a strong understory of oak and a thickly brambled floor. As the brush gives way a little, the oaks take over the ceiling. Young maple saplings stand straight among twisted ironwoods, reaching upward for every stream of light that slips through the twisted oaken arbor. Finally, the underbrush gives way to a soft, grassy floor of sedge and hog-peanut. Leatherwoods, the only shrubs able to survive in the dense shade, glow in the filtered sunlight. Maples dominate every canopy layer. Tiny maple seedlings spread like clover below their elders, huge in girth, their tops disappearing into the dimming sky.

Before logging and before plantations, there was succession and fire, succession and fire. There was power and magic in the size our forests attained, and always the hope and promise of renewal.

We have walked far, and we stop to rest at a grassy clearing on top of a ridge. We don't notice the deer when they slip silently back into the woods, but we miss them once they've gone.

Ahead of us, the forest seems to thin out. Down the hill from us, a red fox slips through the grass. She hesitates, then stops to sniff. Our eyes scan the hillside for the scent's hidden source. We can't see the source, but we can hear it, the last riffs of "Johnny B. Goode." On the breeze come more sounds, carnival sounds of music, of shouting, of laughter. On the breeze float memories of bombpops and ferris wheels, of tilt-a-whirls and fireworks. And on the breeze wafts a scent, now strong enough for us to detect, overwhelming the fox still standing bewildered on the hillside. Popcorn. Pervasive and complete, the scent fills the air, leaving the fox paralyzed in fear in confusion. The sun has set a little more now, but it seems closer, bigger, and more radiant than before. I wipe the sweat from my brow. Leaves are dried and curled, and the grass is tinderbox dry.

Slowly, the music fades, and the last popcorn residue vanishes on a breeze. The fox starts off again, but turns back as if waiting for us. We rise and follow her.

The Old Woods, they are gone. Gone and replaced by the forest that the fox is now leading us through. In places, it is spectacular, with lofty pines, and massive hardwoods ready to turn gilded orange on the first really blustery day. The aspen stands are

EPILOGUE

expansive and especially gregarious in the stiffening breeze. Yet this forest is a patchwork, disconnected and incomplete. Some woods have been cut and replaced by untended rows of pine; some have not been replanted at all. Entire stands are dying, and some of the species that dominate the Old Woods are nowhere to be seen.

The sun sets further, now tainted the color of rust. Salt and oil, and more trees die. Salt and oil, and the new trees grow so slow.

Again we move on, vaguely trailing our lady of the woods to the top of the next ridge, unsure and apprehensive about what we will see. An exhausting climb on a crunchy grass path yields a breathtaking view. Below us, as far as the eye can see, lie the misty forests of tomorrow. These forests are lush, and seem to be growing before our eyes. The species are odd to my eye, but they are beautiful, with some straight and tall, and some intricately twisted, old, and wild.

Again, our guide pauses. Again, a scent we can't detect is accompanied by the sound of music. Only this time it is unfamiliar to me, a royal fanfare of trumpets blaring. We now understand why our guide has brought us to this place. Music once again signals another new age.

And again the smell of popcorn. We look up into the wind, to see the fox darting in fear directly for us. The scent gets stronger, more profound. In the distance, we see the reason for her fear. Men on horseback dressed in red and black, like the perfect painted fox hunt scene on a colonial china plate. And in the hunter's wake of salt and oil, the forests shrivel and die.

We now know why we're here. Only we can protect the fox. Only we can stop the hunt's swirling trail through the forests of tomorrow. Black clouds loom above the horizon, and the sunset turns a dark, steely gray.

Helter skelter, their wicked teeth flashing, the horses thunder on. Helter skelter, nostrils spewing putrid popcorn air, the horses thunder on. At the lead a man rides a raging mare, called Hellbitch, the dank color of storm clouds. Bravely, we lunge and grab for her reins. If we can stop her devastating tear, the others will stop as well. Clearly, she is the one they follow. Tossed, we tumble into what has become an insane carousel of horses and hounds, riders, reins, and us. Bucking, kicking, still hot-spewing, Hellbitch is determined to gallop on. We are tossed, trampled, and again.

Somehow, you rise out of the maelstrom, and raise your weary hands. With a tremendous shout, you clap your hands and the skies suddenly clear. The sunset softly glows sweet lavender. All stand

statue-still. Hellbitch tries to rise up again, but suddenly I have the strength to subdue her. With the lilac sunset gleaming in your eyes, you gently motion to the land below us, to the beauty and the bounty of the forests, to the senselessness of the destruction. One by one the riders slowly dismount. I motion for them to follow us, and together we walk into the sunset forest. The forest now remains undamaged in the wake of the new-formed company of travellers. Our trail is one others can follow.

And so our odyssey ends full circle. In a world so changed by the salt and oil of popcorn's tantalizing scent, we alone have become the guides of the New Age Forest, the teachers of its ways, and the stewards of its preservation.

A song is written about our odyssey; all good odysseys are remembered in a song that will be sung around campfires, bonfires, and conclaves all. In song, simple odysseys become folklore:

Through the valley and through the fields,
a fanfare trumpet blares.
Hunters ride prim and proper,
hounds tear and horses thunder, spewing hot
salt and oil.

Two gentle wanderers hold steadfast and brave,
desperately grasping the reins.
A mighty beast spins a nightmare carousel,
subdued by a forceful invitation,
to journey to a gentler sunset.

Across the prairies and the woods,
leaves green as in ages past.
For the fox in olden age, cunning eluded foe,
but to survive in this age of salt and oil,
the lady wears popcorn perfume.

* * *

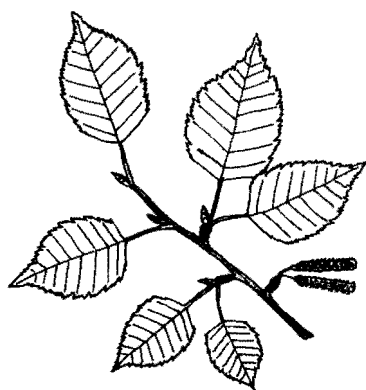
A new age is coming, we can't avoid it. New technology, new industry, big populations, big challenges. But in the classrooms and in the woods, foresters have seen ages come and go. That our forests still exist in such abundance is a measure of our craft, and a promise for the future. Foresters are people who find fulfillment in the journey, enrichment in enhancing the beauty and bounty of the land, joy in the company of good people, and in simple good times. Foresters have overcome many challenges, but the greatest challenges still loom on the horizon.

That we students are taking up forestry is a measure of the depth of our commitment to the land. We will become the guides of the New Age Forest, and in that we take pride.

Fare thee well, my companion. See you next Tuesday at the popcorn stand.

GOPHER PEAVEY

1989





APPLETON PAPERS INC.

LOCKS MILL-COMBINED LOCKS, WISCONSIN 54113/414-788-3551



Rajala Companies
Deer River, Minnesota 56637



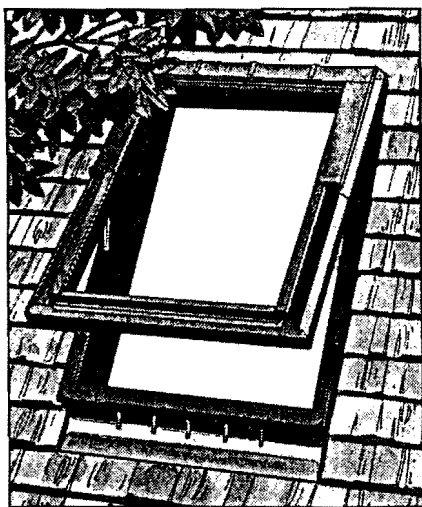
**VILLAUME
INDUSTRIES**

**STRUCTURAL
COMPONENTS**
Roof & Floor Trusses

**INDUSTRIAL WOOD
PRODUCTS**
Boxes-Skids-Pallets

2926 Lone Oak Circle
St. Paul, Minnesota 55121
454-3610

GIVE YOUR OLD ATTIC A BRIGHT NEW OUTLOOK WITH THE NEW ANDERSEN® ROOF WINDOW.



It's more than a skylight. It's a fully operating window with awning, pivoting, cleaning and locked positions.

It's easy to install. With an exclusive step-flashing system that eliminates wet or cold weather worries.

It's beautiful. With a low-maintenance exterior in attractive Terratone color, matching most roof materials.

Natural wood interior can be painted or stained to match your decor.

Exclusive High-Performance Insulating Glass gives more than triple-pane energy efficiency.

Many options and window sizes to choose from.



Come home to quality.
Come home to Andersen.®

Andersen Corporation
Bayport, Minnesota 55003-1096



**NORTHERN
MICHIGAN
VENEERS, INC.**

Gladstone, Michigan 49837

MANUFACTURERS OF SLICED AND ROTARY VENEER FACES

STOCK PANEL AND CUT-TO SIZE

RED OAK
WHITE OAK
HICKORY/PECAN

HONDURAS MAHOGANY
BIRCH & MAPLE
CUSTOM SPLICING

CHERRY
WALNUT
WHITE ASH

PLANT LOCATIONS:

GLADSTONE, MICHIGAN
MATTOON, WISCONSIN

BUTTERNUT, WISCONSIN

SALES OFFICES

GLADSTONE, MICHIGAN
PH 906-428-3113
FAX 906-428-3310

STAYTON, OREGON
PH 503-769-5336
FAX 503-769-6887

GREEN BAY, WISCONSIN
PH 414-497-0788
FAX 414-497-4781

DISTRIBUTION WAREHOUSES

HIGH POINT, NORTH CAROLINA

VANCOUVER, WASHINGTON



**WISCONSIN
VENEER &
PLYWOOD, INC.**

P.O. BOX 140 • MATTOON, WISCONSIN 54450

Manufacturers of Quality Veneer, Plywood and Lumber

BUYING:

- ✓ Veneer Logs
- ✓ Saw Logs
- ✓ All Hardwood Species
- ✓ 8, 10, 12, 14, 16 Foot Lengths
- ✓ Also Standing Timber & Timberlands

Log Buyer-Dana Gustke

Phone-715-258-5630



**MAKE YOUR
MARK
FIRST TIME
EVERY TIME**

with the
TRECODER™ Spot Gun
Lighter, faster, easier
to use . . .

also try
TRECODER
Tree Marking Inks
and
TRECODER
Boundary Marking Inks
for a brighter,
longer lasting mark

**QUALITY
ACMI
INKS**

Forestry Products Division
American Coding and Marking Ink Co.
1220 North Avenue, Plainfield, NJ 07062
(201) 756-0373

**SINCE 1912
WE'VE BEEN TAKING
THE GUESSWORK
OUT OF HOME BUILDING**



**Come in and let our
experts help you with
any building need!**

C.H. Carpenter
LUMBER

9421 LYNDALE AVE. NO. R. COM. FICTON 881-8659	102 WEST 1ST ST SHANDREE 445-2199	16430 ANNA TRAIL S.E. PRIOR LAKE 447-4030	HIGHWAY 5 W. CO. 4 443-2681
---	---	---	-----------------------------------



**SCHERER
BROTHERS
LUMBER
COMPANY**

**THE LUMBERYARD
FOR
ALL REASONS**

- Full Lumber Service • PineCraft
Windows • Castlegate Doors •
Timbers Milled • Patterns Moulded
- Skil, Makita, Paslode,
Milwaukee Tools

**WE SERVICE
WHAT WE SELL**

9-9th Ave. N.E. 379-9633
4947 Hwy. 10 633-9680



General Offices of Coulee Region Enterprises, Bangor, Wisconsin.

CALL OR WRITE FOR PROMPT QUOTATIONS ON:

- Mouldings
- Semi-finished dimension
- Cut to length parts
- Laminated squares
- Edge glued panels

We kiln dry lumber to exacting standards to produce quality parts for a wide variety of cabinet, furniture and specialty manufacturers.

We work with most Northern Hardwoods (and some occasional exotics), specializing in the finest Red Oak to be found.

With 19 years of experience we are proud of our ability to deliver quality dimension on time.

COULEE REGION ENTERPRISES, Inc.

• HARDWOOD DIMENSION PRODUCTS •

MEMBER



NDMA

PHONE 1 Area Code 608) 866-7882
BANGOR, WISCONSIN 54614



Growing for Your Future.

At the Blandin Companies, we're concerned about the future. That's why we're committed to the effective management of our natural resources — and we encourage you to do the same.

Striving for goals. Meeting new challenges. Like the people of the entire Grand Rapids community, we're Growing For Your Future.

THE BLANDIN COMPANIES

GRAND RAPIDS, MN □ PAPER & WOOD PRODUCTS

We're proud to be at the top of the nation

The history of International Falls and of its wood products industry are closely linked. The pioneers who strived to build a city on the Canadian border were also the founders of the paper industry. They understood that the city's prospects for progress and the mill's growth and prosperity would often be intertwined in the coming years.

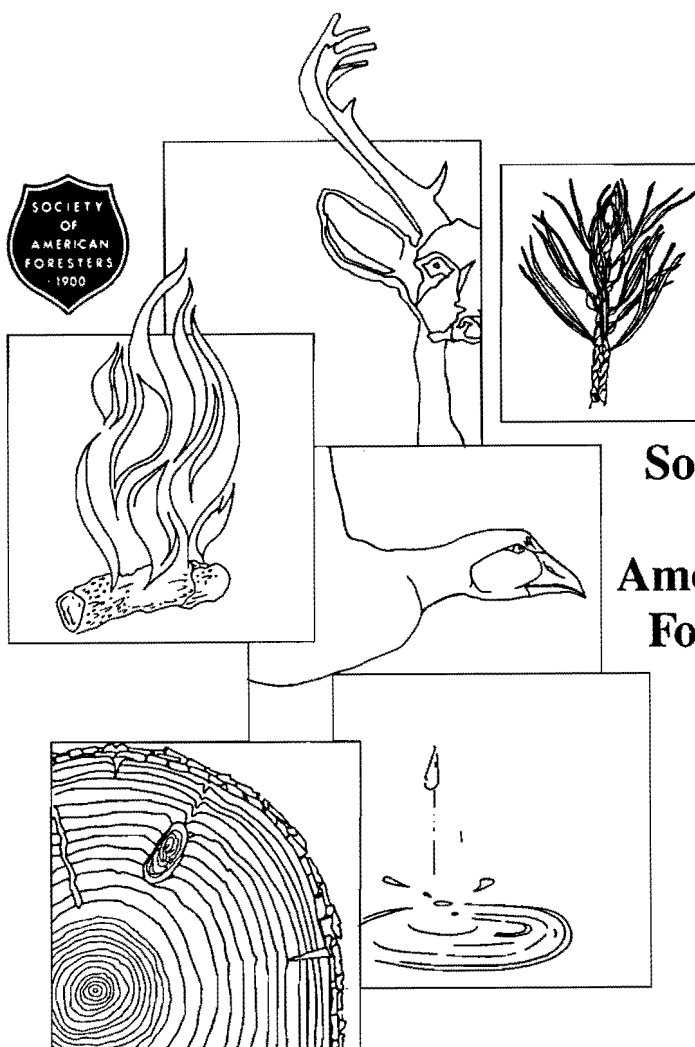
International Falls has come a long way in only 80 years of existence, and we're proud to be here. Our employees, many of them sons and daughters of early paper mill workers, have decades of experience in the craft of pulp and papermaking.

Producing fine paper products at the nation's northern border, we're the people of Boise Cascade.



Boise Cascade Paper Group

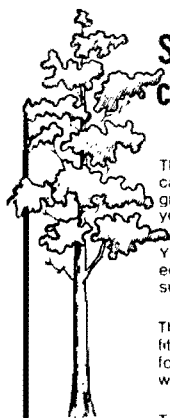
The Quality you want. And then some.



Society of American Foresters

For membership information, write SAF at:

Minnesota SAF
c/o College of Natural Resources; University of Minnesota
235 Natural Resources Administration Building
2003 Upper Buford Circle; St. Paul, Minnesota 55108
or
5400 Grosvenor Lane; Bethesda, Maryland 20814
(301) 897-8720



Some forestry basics cannot be bought.

The basics you'll use in your forestry career cannot be bought. They were given to you — your hands, your eyes, your mind.

You develop these basics through education and experience. And you supplement them with man-made tools.

That's where Forestry Suppliers, Inc. fits in. The tools we sell make it easier for you to develop the basics you were given.

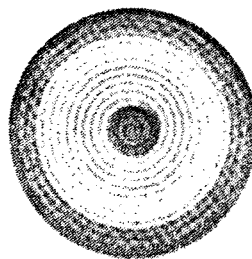
Team up your basics with our tools for your success.



Forestry Suppliers, Inc.

275 West Hankin Street
Post Office Box 8397 — Jackson, Mississippi 39204

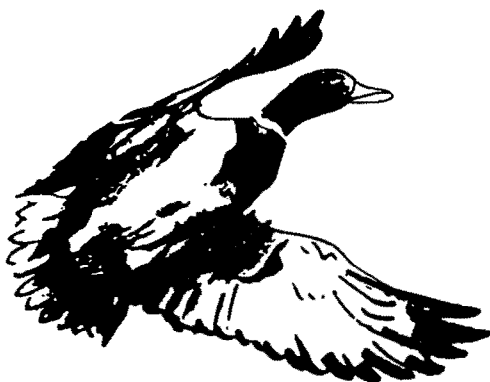
1-601-354-3565



Hennepin Paper Company

P.O. Box 90
Little Falls, Minnesota 56345
(612) 632-3684
1-800-328-8520

EXPERTS IN COLORED PAPER



**FEDERAL[®]
AMMUNITION**

the spot
seen 'round
the world



NEL-SPOT

WORLD LEADER IN
FORESTRY MARKING PAINTS
AND MARKING EQUIPMENT

NELSON PAINT COMPANY

Three plants: Iron Mountain, Michigan
Montgomery, Alabama
McMinnville, Oregon

The New Math:

Woodland Preservation + Woodland Renovation

=

Lasting Woodlands, Inc.

Founded by an urban forestry student here in the College of Natural Resources, LASTING WOODLANDS, INC. is a non-profit advocate of woodlands-sensitive new home construction. The information we provide to interested builders helps save trees where new homes are built. Where trees are killed, we try to make sure that native species are planted in their place, to preserve the natural heritage of our native woodlands.

For information on how you can help us preserve our precious native trees or to get on our mailing list, please call or write us at:

LASTING WOODLANDS, INC.

c/o Christian Siems
1410 S. Greeley St. #26
Stillwater, MN 55082
(612) 439-3356

We're working hard to preserve our native trees. We need your help.



Front and back cover photos
by Bruce Edinger